BEACHES ENVIRONMENTAL ASSESSMENT, CLOSURE, AND HEALTH ACT OF 1993

HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF; JOINT WITH SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

OF THE

COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

H.R. 31

A BILL TO AMEND THE FEDERAL WATER POLLUTION CONTROL ACT AND THE COASTAL ZONE MANAGEMENT ACT OF 1972 TO IMPROVE THE QUALITY OF COASTAL RECREATION WATERS, AND FOR OTHER PURPOSES

JULY 15, 1993

Serial No. 103-44

Printed for the use of the Committee on Merchant Marine and Fisheries

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BEACHES ENVIRONMENTAL ASSESSMENT, CLOSURE, AND HEALTH ACT OF 1993

THURSDAY, JULY 15, 1993

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF, JOINT WITH SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES, COMMITTEE ON MERCHANT MARINE AND FISHERIES,

Washington, DC.

The Subcommittee met, pursuant to call, at 2:00 p.m., in room 1334, Longworth House Office Building, Hon. Solomon P. Ortiz [Chairman of the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf] presiding.

Present: Representatives Ortiz, Eshoo, Laughlin, Schenk, Pallone, Reed, Furse, Saxton, and Castle.

Staff Present: Suzanne J. Waldron, Press Secretary; Robert Wharton, Professional Staff; John Aguirre, Clerk; Terry Schaff, Staff Assistant; Greg Gould, Staff Assistant; Lisa Pittman, Minority Counsel; Laurel Bryant, Minority Professional Staff; Leigh Ann Clayton, Clerk; Barbara-Jeanne Polo, Professional Staff; Daniel M. Ashe, Senior Professional Staff; Chris Mann, Professional Staff; Margherita Woods, Staff Assistant; Rebecca Feemster Dye, Minority Counsel.

STATEMENT OF THE HON. SOLOMON P. ORTIZ, A U.S. REPRESENTATIVE FROM TEXAS, AND CHAIRMAN, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

Mr. ORTIZ. Good afternoon.

The Subcommittees here will come to order and I would like to welcome all of you here today on behalf of the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf, and the Subcommittee on Environment and Natural Resources.

Today, the Subcommittees meet to discuss H.R. 31, the Beaches Environmental Assessment, Closure, and Health Act of 1993.

I would like to commend my good friend from New Jersey, Mr. Hughes, for his leadership in the fight to ensure clean beaches and recreational waters. I, too, share his concern for the health of the Nation's beach-goers.

I am concerned with the high occurrence of beach closures across the Nation. I believe that vacationers should not be concerned that they will become infected while visiting the shore, or that potentially dangerous debris will be floating in the water.

I hope that we cannot only address the issue of how to monitor and assess the health of our beaches in order to protect public safety, but also how to stop our beaches and beach waters from being polluted in the first place.

We have asked representatives here today from Federal and State Governments and from national public policy organizations to provide their perspectives on H.R. 31, the advantages and disadvantages of instituting national criteria and monitoring for coastal recreational waters, and the effects and costs of this legislation at the State level where it will be implemented.

STATEMENT OF THE HON. JIM SAXTON, A U.S. REPRESENTATIVE FROM NEW JERSEY, AND CHAIRMAN, SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

Mr. ORTIZ. The other Ranking Member, Mr. Weldon has not arrived, but we will recognize my good friend, Mr. Saxton, for a statement.

Mr. SAXTON. Mr. Chairman, thank you very much.

I have a statement that I would like to submit for the record, but in the interest of time, let me just commend my colleague from New Jersey, Mr. Hughes, who has been the prime sponsor for at least two sessions of this very important bill.

Welcome Senator Lautenberg.

As you can see, those of us who are from New Jersey and have had experience with keeping coastal areas clean and pristine and restored, work as a team in order to carry that out.

This is an important bill. I would just point out that there has been a great deal of concern and a great deal of study relative to the condition of offshore waters and near shore waters.

The National Academy of Sciences, for example, has done exhaustive studies, and I would just like to read one of their findings from one of their recent studies. They say that, "Over 100 pathogenic viruses and bacteria have been identified in runoff and sewage. Numerous shellfish beds and bathing beaches are closed due to unacceptable levels of coliform bacteria each year."

And, of course, this is true not just in New Jersey. In fact, New Jersey has cleaned up its act with standards we believe should be put in place throughout the country, throughout the coastal areas.

"Although concentrations of coliform bacteria higher than conventional standards indicate unacceptably high risks of exposure to human pathogens through water contact, sports, or consumption of shellfish, the opposite is not true. Concentrations of coliform bacteria below the standards do not reliably predict that waters and shellfish have safe levels."

So, Mr. Chairman, due to our experience, due to our ability to put in safe standards in New Jersey, due to our ability to clean up our shore areas, our tourism industry is once again thriving. We can use New Jersey as a case study. We can use New Jersey as an experience through which the rest of the coastal areas of our country can also thrive.

So I certainly am a strong supporter of Mr. Hughes' effort and thank you for the time.

Mr. ORTIZ. Thank you.

[The statement of Mr. Saxton follows:]

STATEMENT OF HON. H. JAMES SAXTON, A U.S. REPRESENTATIVE FROM NEW JERSEY, AND CHAIRMAN, SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

I want to thank both Subcommittee chairmen for holding this hearing today. This Committee supported and passed this legislation in the last Congress, with successful passage in the full House. Unfortunately, the 102d Congress adjourned before Senate deliberations could begin. Keeping an eye on the legislative calendar this year, I feel optimistic that we can give the Senate the ample time they need.

I also want to compliment my colleague from New Jersey, Mr. Hughes, who has had the foresight to pursue this legislative initiative. Two recent studies have documented the critical need for developing standards, better testing criteria and monitoring procedures to address unsafe beaches and estuaries along our Nation's coastline.

The National Academy of Sciences recently published their report on "managing wastewater in coastal urban areas". Listed as one of the highest priorities by the Academy's study are pathogens and the need to develop more accurate testing procedures and standards to ensure against the transmission of disease. And I quote:

"Over 100 pathogenic viruses and bacteria have been identified in runoff and sewage. Numerous shellfish beds and bathing beaches are closed due to unacceptable levels of coliform bacteria each year....Although concentrations of coliform bacteria higher than conventional standards indicate unacceptably high risk of exposure to human pathogens through water contact sports or consumption of shellfish, the opposite is not true—concentrations of coliform bacteria below the standards *do not* reliably predict that waters and shellfish have safe levels..."

The National Academy recommends that "The EPA, public health agencies, and wastewater treatment agencies should vigorously pursue the development and implementation of techniques appropriate for routine monitoring to measure more directly the presence of pathogens, particularly in marine and estuarine waters."

A similar study, conducted by the Natural Resources Defense Council, documents the same urgency for developing more accurate testing and monitoring techniques—recommending a provision for developing such standards be included as a critical component of any clean water act reauthorization.

Mr. Chairman, H.R. 31 is a good bill. It provides States with the flexibility necessary for designing monitoring programs tailored to their specific needs. And it directs the EPA to finally develop more accurate indicator tests capable of ensuring the public's safety and the health of our Nation's coastlines.

I look forward to hearing from today's witnesses and expeditiously moving this legislation through Full Committee markup.

Thank you, Mr. Chairman.

STATEMENT OF THE HON. LYNN SCHENK, A U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. ORTIZ. Does the gentlewoman from California, Ms. Schenk, have a statement?

Ms. SCHENK. Well, I will take that as a compliment Mr. Chairman, thank you.

I do, and I would like to submit my statement for the record.

I will just take a moment to thank you for holding this hearing and to thank my colleague, Congressman Hughes, for his leadership and persistence in pursuing this important legislation and it is a very special moment for me to be here with my—I won't say old friend because we don't say old—my long time friend, Senator Lautenberg, who has been such a leader in this area.

My district in San Diego, California, has the dubious distinction of containing one of the most polluted beaches in the country: Borderfield in Imperial Beach. But luckily, I also represent some of the most beautiful beaches. Imperial Beach is basically a matter of untreated sewage outflow from Tijuana and we are working very hard to correct that problem.

But San Diego's experience points up the necessity for consistent beach water quality standards. H.R. 31 would provide that consistency. And again, I commend Congressman Hughes for his diligence in bringing this issue before us.

I look forward to working with you, Congressman Hughes, and with the other Representatives not just from New Jersey but the other States in a team to make sure that this happens and happens quickly.

Thank you very much.

STATEMENT OF THE HON. MICHAEL N. CASTLE, A U.S. REPRESENTATIVE FROM DELAWARE

Mr. ORTIZ. Governor Castle?

Mr. CASTLE. Thank you very much, Mr. Chairman, for the opportunity to say something.

I would like to submit my statement for the record, too. But to all my friends here from New Jersey, we appreciate all that you are doing because we are not very far away from you in Delaware and what you do impacts us.

The elimination of ocean dumping and some other things which have happened in the last 10 years have done a tremendous amount to improve the waters in our areas. I think most people in this room probably know Rehobeth Beach. If you don't, go down there this weekend. You will enjoy it.

We believe Delaware's beaches are among the most beautiful in the country. It is our number one tourist attraction.

To protect our beaches and swimmers, Delaware has implemented one of the toughest water testing and health programs in the Nation. As a governor, I was proud to oversee the program that far exceeds the recommended limits issued by the EPA.

Our risk standard is tougher and our monitoring and testing program is more rigorous. For example, we test water quality two to three times more often than the recommended EPA guidelines, and our rainfall advisories set standards that vary according to each sight, based on years of bacterial and rainfall data.

Our system is so good, the National Park Service is considering adopting components of the program nationwide. Delaware's clean, safe beaches are pretty close to all of us, too.

I would say this: None of that came easily. We went through some experimentation and had tremendous problems with beach closings, with testing systems which did not work, with almost any problem you could possibly name. It was only with a lot of experimentation and only in the last five years were we able to work out those problems which exist. Now we think we have a solution which satisfies us.

I support the legislation certainly in concept. I hope it will provide us with enough flexibility to make proper adjustments in accordance with geographical areas in the ocean and other water conditions which exist because of currents in any particular circumstance. But I strongly support this. There has been a lot of illness and a lot of problems as a result of it, the problems of California, which, fortunately, we don't share, coming from another country,

and just a lot of other things we have to deal with in the United States of America.

I happen to believe this is a good piece of legislation, which I hope gets consideration in both the House and the Senate.

Thank you.

[The statement of Mr. Castle follows:]

STATEMENT OF HON. MIKE N. CASTLE, A U.S. REPRESENTATIVE FROM DELAWARE

I would like to thank the Chairman for holding a hearing on this vital issue, which not only is a critical environmental protection issue, but also impacts State and local economies. As many of you have visited Delaware's beaches are aware—Rehobeth Beach, Delaware, is known as the Nation's "summer capitol." I may be biased, but I believe Delaware is home to some of the most beautiful beaches in this country. Our beautiful beaches are the first State's top tourist attraction, and provide a considerable amount of income to our State and local economies. They are a part of the rich quality of life Delaware provides its citizens and visitors.

To protect our beaches and swimmers, Delaware has implemented one of the toughest water testing and health programs in the Nation. As the State's former governor, I was proud to oversee a program that far exceeds the *recommended* guidelines issued by the EPA. Our risk standard is tougher, and our monitoring and testing program is more rigorous. For example, we test water quality 2- to 3-times more often than the recommended EPA guidelines, and our rainfall advisories set standards that vary according to each site—based upon years of bacterial and rainfall data.

In fact, our system is so good that the National Park Service is considering adopting components of the program for use nationwide. And Delaware's clean, safe, beautiful beaches are less than 3 hours away.

Nationally, however, beach closings increased by as much as 30 percent last year. Too often, beach health and safety standards are neglected. The risks of contaminated coastal waters cannot be ignored. Intestinal disorders, hepatitis, and eye infections can be transmitted through water contact and ingestion. Medical and solid waste also must be part of any clean beach solution.

In addition, I would hope that any binding EPA Program would allow States the flexibility to make proper adjustments for regional and local conditions. Water currents and other site-specific factors can influence risk and monitoring standards. Non-human sources of sewage also contribute to a different risk standard than sewage from industrial waste. Delaware, partly due to its size, has been able to allow the flexibility that is necessary to maximize protection of beaches based upon a wide array of criteria and data.

I strongly believe we must support efforts to protect America's beaches and swimmers from waste and disease, and I look forward to the testimony from the distinguished panel before us this afternoon.

Thank you, Mr. Chairman.

Mr. ORTIZ. Do we have any other opening statements?

Mr. SAXTON. May I just ask unanimous consent that our Ranking Members Mr. Fields' and Mr. Weldon's statement be included in the record at this point?

Mr. ORTIZ. Hearing no objection, all statements will be included in the record.

[The statement of Mr. Fields follows:]

STATEMENT OF HON. JACK FIELDS, A U.S. REPRESENTATIVE FROM TEXAS, AND RANKING MINORITY MEMBER, COMMITTEE ON MERCHANT MARINE AND FISHERIES

Chairman Ortiz and Chairman Studds, the Beaches Environmental Assessment, Closure and Health Act has a three-Congress history of controversy, but perhaps the third time will be the charm.

Millions have flocked to Texas beaches to enjoy Gulf waters, and its recreational shores provide a strong boost to our economy. We don't want people getting sick after a day on our coast.

However, the coastline of Texas is not only long (over 2,000 miles), but varied. We have major ports, as well as long stretches of sparsely-populated shores. There is a question whether a single standard for testing coastal waters can be applied

throughout the State, much less throughout the Nation. The cost of complying with Mr. Hughes' bill is also at issue, especially in States with long coastlines and long tourist seasons, like Texas. The Washington Post recently noted the dissatisfaction voiced by States faced with an extended laundry list of Federally-imposed obligations with no funds or technical assistance to back them up. Finally, there is a question whether the human health risk posed by swimming in less than pure waters—which can be generally described as uncomfortable but hardly deadly—is worth EPA's time and money when there are many other, more significant environmental challenges which need the Agency's attention.

I look forward to hearing from our witnesses and hope that these issues can be addressed as we move forward with the B.E.A.C.H. Act.

[The statement of Mr. Weldon follows:]

STATEMENT OF HON. CURT WELDON, A U.S. REPRESENTATIVE FROM PENNSYLVANIA

Mr. Chairman, Congressman Hughes should be commended for reintroducing the Beaches Environmental Assessment, Closure, and Health Act. So much of our coastal economy depends on tourism, and we should protect those who use our waters for recreation, just as we attempt to protect shellfish from the effects of water pollution.

The people of Pennsylvania are not blessed with an ocean shore, and a great many travel to the New Jersey beaches. This is fortunate because New Jersey has some of the most stringent recreational water quality standards in the country. My guess is that most swimmers don't realize that coastal bathing standards vary from State to State and that many waters are tested infrequently. They rely on State and local governments to protect their health, and there is some concern that the existing Environmental Protection Agency guidance to States on recreational water quality falls short of this.

I think we can all agree that jumping into the waves at Ocean City, or Pensacola, or San Diego, or Seattle, shouldn't be harmful to your health. The question is, "At what price?" Critics of earlier versions of Mr. Hughes' bill note that compliance costs for States to monitor and test their coastal recreational water can be astronomical. Coastal business operators and coastal communities dependent on tourist dollars are concerned that overly protective standards will impair their livelihood without any proof that people are getting seriously ill. And there is the question whether the EPA should invest time and money in establishing new standards, when there are more serious environmental risks to human health to be addressed.

I hope that our witnesses can add to the debate on the bill and I thank our Chairmen for scheduling this hearing.

Mr. ORTIZ. We don't have any other opening statements?

Thank you.

We are pleased to have testifying before us today the distinguished Senator from New Jersey the Honorable Frank Lautenberg. The Senator serves as Chairman of the Appropriations Transportation Subcommittee. He is a Member of the Budget Committee, a Member of the Environment and Public Works Committee, and the Small Business Committee.

He has introduced legislation in the Senate similar to the bill we are considering today.

Senator, we take this opportunity to welcome you and thank you for agreeing to appear before us today. I understand that your colleague from New Jersey, Senator Bradley, will not be able to join us today because of other business he has pending, but he will submit his statement for the record.

[The statement of Senator Bradley can be found at the end of the hearing.]

STATEMENT OF THE HON. FRANK R. LAUTENBERG, A UNITED STATES SENATOR FROM THE STATE OF NEW JERSEY

Mr. ORTIZ. Senator.

Senator LAUTENBERG. Thank you very much, Mr. Chairman, for the nice words of welcome.

I want to thank my colleague, Bill Hughes, who is not only a distinguished colleague, but a good friend, for his leadership in this area and for deferring these few minutes so I can make the trek back to the other side.

I am also delighted to see another colleague from New Jersey, Jim Saxton. That must tell you something about our determination to help get this bill enacted. It is because we are proud of New Jersey's coastal monitoring program and the cleanliness of our coastal waters. We think that this bill ought to pass.

I was interested in Representative Schenk's comments because she does come from a beautiful part of the country. Having an awareness of the pollutants in those waters can help get them cleaned up. Unfortunately, some States do not regard beach water quality as a public health problem. And as our colleague from Delaware, the former governor, pointed out, little States like ours have enormous amounts of coastline associated with very small land mass.

So, Mr. Chairman, I am pleased to testify here today in support of H.R. 31, the Beach Testing Bill. That bill is critical to protecting the health of millions who visit our coastal beaches every year.

My colleague, as you noted, Senator Bradley, could not be here but he has joined me in introducing the Senate companion bill as well as both of the Senators from California, Senator Boxer and Senator Feinstein, as cosponsors.

Once again, I commend the dean of the New Jersey delegation, Congressman Bill Hughes for his leadership in this area, as well as so many others. His initiative and his determination is to protect the health of the Nation's bathers.

Mr. Chairman, in enacting the Clean Water Act in 1972, Congress established a basic goal for the Nation: To make our waters fishable and swimmable. And while water quality has improved markedly since the enactment, we cannot accurately assess our progress toward making waters swimmable because States do not regularly test beach waters to determine whether or not they are truly safe for swimming.

Today throughout our Nation, families are splashing in the waves and they believe that they are engaging in a safe activity, giving them nothing but joy and recreation. But if the water they are swimming in is instead giving them a bath of the bacteria that can make them sick, they don't even know that and they are entitled to know that. Here is a case where ignorance is not bliss. Ignorance is risky.

All of those enjoying the ocean this summer ought to have the confidence that they know what they are getting into, that they know what the quality of the water is and the risk of swimming in those waters.

Frankly, I think this is the just right kind of a pebble in a shoe, because if States are forced to post these alerts to poor quality contamination of water, perhaps it will encourage us all to do more about cleaning up the water. But letting people just jump into the water without having any idea what kind of risks they are posing, I think is unfair to those who like to enjoy the swim.

The Natural Resources Defense Council, in a recently released report, found that even when States do monitor water and discover unsafe bacteria levels, they don't always alert the public to it. They often don't close the beach.

A high bacteria level can cause a beach closure in one State, while a State right alongside of it may be—may allow people to swim in the water despite equal health risks.

EPA's measure to monitor marine water quality underestimates the true health risks that are faced by bathers. States using existing EPA guidelines decide whether their beach waters are safe for swimming based on some averages that are accumulated monthly. Waters may appear safe in the long-term, but short-term violations of the public health standards often go unrecognized. These guidelines are not useful to decisionmakers who need to determine whether they should allow people to swim at the beach tomorrow or during the coming weekend.

The beach bill will help ensure the safety and beauty of coastal beaches across the country by establishing uniform testing and monitoring procedures for bacteria and floatables in marine recreation waters. It will also require that beach-goers are notified through advisories of beach closures when the standards are exceeded, whether they are in my State of New Jersey, which is the only State right now that mandates such closings by law, or in any other State.

Now, I have heard concerns about the cost of the beach monitoring, but the NRDC found that after surveying 22 coastal States, the costs of monitoring beach water quality are minuscule when assessed in light of the billions of dollars that tourists spend annually visiting coastal beaches. New Jersey, for example, spends only $200,000 a year in its monitoring and public information program, while reaping $9.5 billion in income generated from coastal tourism.

Now, it is my intention to work for inclusion of the beach bill in the Senate's version of the Clean Water Act. That is being reviewed now. Hearings are being held.

In closing, Mr. Chairman, I would say once again that States ought not to be afraid of competition. What they ought to be afraid of is permitting their citizens to bathe in unsafe waters.

They have lifeguards there to make sure that people don't get caught in the undertow or get out too far in the ocean. Why can't they be just as concerned about the quality of water that children and adults bathe in?

I commend you once again, Mr. Chairman, for holding this hearing, and I urge this joint Committee hearing to be able to generate the support for this legislation. Join us in recognizing the importance of protecting public health at our Nation's beaches.

I thank you very much.

Mr. ORTIZ. Thank you, Senator, for appearing before our Committee.

[The statement of Senator Lautenberg can be found at the end of the hearing.]

Mr. ORTIZ. Now, of course, I would like to introduce my good friend and a member of the full Committee and the author of H.R. 31, Mr. Hughes.

Mr. HUGHES. Mr. Chairman, I would defer to any questions any member might have for the Senator before he leaves.

Mr. ORTIZ. Mr. Castle.

Mr. CASTLE. I don't know if this is an appropriate question. Just a quick question, Senator. And this is something I don't know for a fact, but I understand this piece of legislation has passed in the exact form, or a very similar form, the last two years and not been acted on in the Senate.

Is there anything that should be done differently in the legislation to have it considered in the Senate or can you share with us if the chemistry in the Senate is different this year? I have no idea what happens in the House, so if you can't answer that question, I understand that.

Senator LAUTENBERG. I can answer it. It is not the chemistry of the water that is holding this back. It is the chemistry of some of those who are afraid to step out and say, "I am willing to declare that these waters are safe for our citizens."

It is believed by some that putting your head, to use the expression, in the sand is the way to deal with this problem. But I can assure all of those doubters, that if the people have an understanding of what there is in the water, they will come and they will come in droves, if they know that the State is honest with them in working to clean it up. That is why New Jersey's beaches and Delaware's beaches are so popular. People have a sense that there is no junk that they ought to be aware of and there is no bacteria that are going to make them sick.

Mr. CASTLE. Thank you, sir.

Mr. ORTIZ. Do we have any other questions from the Members? The gentlewoman.

Ms. ESHOO. From California.

Mr. ORTIZ. That is right.

Ms. ESHOO. Thank you, Mr. Chairman.

Senator, I would like to commend you and your House counterpart, Mr. Hughes, for stepping out and authoring this legislation. It is, in my view, highly meritorious. Having come from local government and as a Californian, what I would like to maybe zero in on for a moment is the cost. Coming from a State that has an 840-mile long magnificent coastline, and our struggles to protect it, I am mindful there is less than $3 million for coastal zone management in California, per the mandate of the Congress, to not only oversee that States oversee that program, but the resources are next to nothing.

Of the money that would accompany this bill, do you feel that this is actually feasible, so that it would not only complement the smaller States but take into consideration what the task, what the undertaking of the State of California would be?

Senator LAUTENBERG. I am reminded by my distinguished friend and colleague, Bill Hughes, who has been involved in protecting coastal waters for almost all of his years here, that presently in the State of California, $650,000 per year is being spent in simply six counties on the coast. We, as I mentioned earlier, spend $200,000 a year monitoring these waters for a tourist business of about $9.5 billion. So I think the costs relative to the benefit are really de minimis.

The money we have got included in the bill—I think there is $8 million overall that can give some grants and help the States with what might be considered a burden. I think that is more than enough to get the job done. I think that the benefits to be reaped are far, far more.

Ms. ESHOO. I don't question the benefits. I just want to make sure that the dollars that are there will ensure that we are reaping the benefits that your legislation proposes. I don't doubt the merits of what you attempt to do. Of course, we are very sensitive about mandates without the money being there, then this magnificent piece of legislation would really——

Senator LAUTENBERG. I know, because as Chairman of the Transportation Appropriations Subcommittee, I hear from my colleagues from California quite regularly.

Ms. ESHOO. May I just ask a follow-up question, Mr. Chairman?

Mr. ORTIZ. Yes, go ahead.

Ms. ESHOO. The legislation obviously is for the entire Nation. Does one size fit all? I mean, when one compares California to smaller States and what needs to be done on their coastlines, is this taken into consideration?

Senator LAUTENBERG. You mentioned 800 miles of coastline.

Ms. ESHOO. Eight hundred and forty. Don't leave that 40 miles out, it may be mine.

Senator LAUTENBERG. That is mindboggling. I would tell you by my quick measurement, we have about 300 miles of coastline in a State as big as New Jersey. We also have almost 8 million people in there.

If we have an appropriate standard by which to measure beach water quality, States can decide. There is no compulsion that you have to necessarily close your beach. What you may be required to do is advise the citizens about what they are getting into. It seems fair to me that that ought to happen.

Ms. ESHOO. Thank you very much.

Mr. SAXTON. Will the gentlelady yield to me?

Ms. ESHOO. Yes.

Mr. SAXTON. I just would supplement what the Senator said with the experience that we had in New Jersey, beginning in about 1987, when people drew the conclusion that our beaches and our offshore and onshore waters were not clean. The tax money alone that we lost during those two years when medical waste was washing up on the beach, when we had sewer lines break and raw sewage go into the ocean and beaches, people didn't go to the shore area, and as a result, they took their vacations elsewhere and we lost hundreds of thousands, millions of dollars in revenues in our State Treasury.

So what the Senator says is absolutely correct. What you can gain by making this relatively minor investment is really well worthwhile.

Mr. ORTIZ. Thank you.

STATEMENT OF THE HON. WILLIAM J. HUGHES, A U.S. REPRESENTATIVE FROM NEW JERSEY

Mr. ORTIZ. Mr. Hughes, would you like to begin?

Mr. HUGHES. Yes.

Thank you, Mr. Chairman. I particularly want to thank you, Mr. Chairman, and the Chairman of the Environment and Natural Resources Committee for this joint hearing today. It is very timely and I appreciate your giving us this opportunity.

Mr. Chairman, I have a statement which I would like to submit for the record, I think to avoid duplication, because much of what I would have said has already been said by our Senator and will be said by Senator Bradley in his statement, I will summarize, if I may, and then try to respond to some questions.

You and I have worked together for a long time, as well as my colleague from New Jersey Jim Saxton. We fought a lot of battles trying to develop ocean policy.

Unfortunately, as I have said from time to time, fish don't have a constituency. That is why it has been so difficult developing ocean policy over the years. Also there is a certain amount of fear. There was a certain amount of fear, if the gentleman from Texas will remember, about our ocean dumping initiatives as well.

We were waiting for a perfect solution, including development of land-based alternatives. There is a certain amount of fear out there that we are going to do something that will be unfair to some States, something that will create additional costs. I would like to address some of those issues if I may.

We are talking about developing uniform standards. It shouldn't matter whether you swim in California or in New Jersey, either the waters are swimmable or they are not. They are either safe for the bathing public or they are not safe. If we can agree that the public has a right to know whether waters are polluted, I think we have crossed the threshold.

I would hope that every Member of this Committee will agree that the public does have a right to know if waters are swimmable and whether they and their children are at risk if they use those waters. That is, I think, the first premise of this particular legislation.

The second premise is that we can utilize the best science we can muster. Now, EPA is going to tell us once again today that, well, we haven't really found the right science, the right standard. Well, they already have. Enterococci is the standard they have developed.

Eight States have accepted that standard to date, Delaware being one of them. Most of the States have not accepted.

Some States utilize the fecal coliform standard. Some use the total coliform standard. Some use a combination of both. Look, we can do better than that. We should be developing the best science, the best standard that we can develop and apply that standard in determining whether or not waters are safe for recreational purposes.

Finally, we should be able to agree upon how often we should test. Developing testing protocols has to be an essential part of any overall standard.

Now, there has been some concern in the past, about the effects of this bill upon States that have long shorelines such as Texas, California, and Florida. Some States have beaches that have hun-

dreds of thousands of people visiting them every year, while others have no bathers.

The legislation has built into it a standard that says if, in fact, beaches are not used, then different protocols are applied. It also has built in standards that take into account the risk, if the beaches are adjacent to, for example, a storm drain that overflows. Clearly, this is a higher risk area than one that does not have a storm drain or a wastewater treatment facility with problems. That is built into the legislation.

The legislation also has an escape valve. If a State can demonstrate to the Environmental Protection Agency that they have in place standards and protocols that assures the public is protected, they can request an opt-out of the bill.

Mr. Chairman and Members of the Committee, I don't know how much more flexibility we could provide to assure the States. Now, some individuals indicate that it is going to be very expensive. Well, I suppose if we based everything we did around here upon whether it was going to cost additional moneys, we probably wouldn't get anything accomplished. I think we would agree that the amount we are talking about is very little.

Senator Lautenberg has indicated that we have one of the best testing programs in the country in New Jersey. Even with our length of coastline,it costs us $200,000 a year.

We are not talking about a lot of money. I don't think money is the issue. How much are we talking about in costs to human health? I remember just a few years ago, we had a rash of earaches and other problems because we had polluted waters.

One of the reasons why New Jersey has moved with such dispatch is because we have been there. We understand the difficulties and we have tried to head off some of the public health problems.

I think the recent Natural Resources Defense Council Beach Closing Report clearly demonstrates that we have problems we need to be addressing. It indicates that we had 726 occasions, in 22 coastal States last year, of problems, primarily attributable to human and animal waste.

Now, you are going to hear once again from the Environmental Protection Agency that we haven't really developed the science to deal with the problems.I want to tell you that I am very disappointed by this response.

"Give us some more time." They have been saying that since we put into law back in 1986 some criteria to try to protect the public. States have not moved forward on implementation of this criteria.

We have no degree of uniformity throughout the country. In my judgment, there is as much, if not more, of a need today as there was when we first passed the bill out of this distinguished Subcommittee just a few years ago.

So I hope, Mr. Chairman, that this Committee will favorably consider the legislation, and report it out at the earliest possible time, so we can move it on to the other body before the close of the session. To address Mr. Castle's question about what happened in the Senate, unfortunately, the bill got caught in the closing weeks of the session. As you know, Members of the Senate can put a hold on

a bill and kill anything that they want. So we need to act with some dispatch.

If I could just say one additional thing. Today is Ashley Evans' last day with me. She is a staffer who has worked with me on this bill, ocean dumping and many other measures. She is going on to law school. She came to me as a Sea Grant Fellow just three years ago. She has been a wonderful staffer. I want you to know that I very much appreciate her work on this legislation and on all the other legislation she worked on for me on this distinguished Committee.

Mr. ORTIZ. Very good, Mr. Hughes. I know when she comes back, you will have an opening for her.

Thank you for your testimony.

[The statement of Mr. Hughes can be found at the end of the hearing.]

STATEMENT OF HON. WILLIAM J. HUGHES, A U.S. REPRESENTATIVE FROM NEW JERSEY

Mr. Chairman, thank you for conveying this hearing today. I am very pleased that the Oceanography Subcommittee and the Environmental and Natural Resources Subcommittee have joined today to consider H.R. 31, the Beaches Environmental Assessment and Closure Health Act, which I introduced earlier this year. This issue is of great importance to me and it is very timely to consider it now, in the midst of the beach-going season.

I would like to welcome the distinguished panel, particularly my colleagues, Senator Lautenberg and Senator Bradley. I appreciate your support and interest in this issue and thank you for taking time from your busy schedules to attend this hearing today.

Much of the coastal pollution legislation that we consider today deals with improving the quality of our Nation's coastal waters with an eye towards preserving important habitat for the plants and animals that live there.

My bill, however, is designed to protect human health and it does so in a simple and straightforward manner. The bill would improve the quality of our coastal recreation waters by establishing a uniform program for the testing and monitoring of our Nation's beaches.

The most recent Natural Resources Defense Council Beach Closing Report (June 30, 1993), reinforces the need for such comprehensive water quality standards. Their study found that beaches were closed or advisories posted on more than 2600 occasions in 22 coastal States last year due to elevated bacteria levels attributable primarily to human and animal waste. Clearly, these figures emphasize that the problem of sewage contamination and polluted runoff into our coastal waters, and its associated health risks, are persistent.

Cleaning up existing sources of pollution, including polluted runoff, is clearly the best and the most important remedy to the problem of beach water contamination. In the interim, however, consistent programs to adequately protect beachgoer health must be set in place.

New Jersey has a stringent beach testing program. Some States, however, test their beaches infrequently, while many do little or no testing at all. Moreover, States use different standards of varying efficacy to judge the safety of coastal waters.

Clearly, it is time to replace this patchwork of testing procedures with a single national standard which will assure the public that beaches are tested on a regular basis and that bathing waters are clean and safe. Bathers have the right to know if they are swimming in safe waters whether they are in Maine, New Jersey, or Florida.

To address these inconsistencies, the B.E.A.C.H. bill requires EPA to establish minimum water quality criteria for States to follow in adopting standards to detect high concentrations of bacteria and viruses in recreational waters.

States would be required to post advisories when water quality is poor, but will have the flexibility in determining beach closures and implementing stricter standards.

In order to reflect the variety of conditions of our Nation's beaches, the bill requires EPA to issue monitoring procedures based on how frequently a beach is used,

proximity to pollution sources, and short-term increases in pathogens which result from rainfall, sewage plant malfunctions, or other causes.

The Bill also calls for the development of a research program to determine the most effective indicators of environmental quality and a plan to deal with floatable materials. Finally, EPA and the States will receive information and assistance in implementing the legislation.

One additional point I would like to note about the NRDC Study is that it showed that monitoring programs are affordable and, with 160 million visitors to ocean and bay beaches last year alone, are an investment well worth making.

This bill is a great improvement to the shortcomings that currently exist in beach testing and monitoring. It provides a "stamp of approval" for States to proudly show people who live and vacation along the shore. Indeed, for coastal States, clean beaches and ocean waters serve as a major source of recreation and are the foundation of their tourism industry.

I believe this is good environmental policy and I urge my colleagues' support.

Mr. Chairman, thank you again for convening this timely hearing. I will close my remarks by welcoming this panel. I look forward to their testimony.

Mr. ORTIZ. Now we will go to the panel, but we will recognize the Members by seniority as they came into the hearing.

Thank you very much.

Mr. HUGHES. Thank you.

Mr. ORTIZ. I would like now like to introduce the second panel.

We have first Margaret Stasikowski, Director of Health and Ecological Criteria Division of the Office of Science and Technology at the Environmental Protection Agency.

Vickie Allin is Chief of the Policy Coordination Division of the Office of Coastal Resource Management of the National Oceanic and Atmospheric Administration.

Next, of course, is my good friend from Texas, Garry Mauro, Commissioner from the Texas General Land Office.

Marlin Dooley is the Director of Enforcement Coordination of the New Jersey Department of Environmental Protection and Energy.

Sarah Chasis is a Senior Attorney with the Natural Resources Defense Council and is the Director of their Coastal Project. She has directed the NRDC Beach Closure Report for the last three years.

Last is Betsy Schrader. She is the Coordinator of the Marine Debris Program for the Center for Marine Conservation.

We are very happy to have you with us here today.

We can begin with Ms. Stasikowski. That is a good Mexican name; isn't it?

Ms. Stasikowski.

STATEMENT OF MARGARET J. STASIKOWSKI, DIRECTOR, HEALTH AND ECOLOGICAL CRITERIA DIVISION, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY: STEVE SCHAUB, SENIOR MICROBIOLOGIST, OFFICE OF WATER, EPA; VICKIE A. ALLIN, CHIEF, POLICY COORDINATION DIVISION, OFFICE OF COASTAL RESOURCE MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ACCOMPANIED BY: THOMAS O'CONNOR, CHIEF, COASTAL MONITORING BRANCH, OFFICE OF OCEAN RESOURCES, COORDINATION AND ASSESSMENT; GARRY MAURO, COMMISSIONER, TEXAS GENERAL LAND OFFICE; MARLIN DOOLEY, DIRECTOR, ENFORCEMENT COORDINATION, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY; SARAH CHASIS, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL; AND BETSY SCHRADER, COORDINATOR, MARINE DEBRIS PROGRAM, CENTER FOR MARINE CONSERVATION

STATEMENT OF MARGARET J. STASIKOWSKI, DIRECTOR, HEALTH AND ECOLOGICAL CRITERIA DIVISION, EPA, ACCOMPANIED BY STEVE SCHAUB, SENIOR MICROBIOLOGIST, OFFICE OF WATER, EPA

Ms. STASIKOWSKI. Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is Margaret Stasikowski. I am the Director of the Health and Ecological Criteria Division in the EPA Office of Water. I am accompanied today by Dr. Steve Schaub, Senior Microbiologist in our Office of Water.

Everyone should be able to enjoy a day at the beach without worrying about health risks of infectious diseases. The agency understands the importance of our coastal waters as a resource for recreation by visitors from around the world.

Tourism at our coastal areas is important commercially as American and international visitors alike generate billions of dollars annually. As the Federal agency with primary responsibility for implementing the Clean Water Act, EPA is fully committed to achieving the goal of maintaining fishable and swimmable waters nationwide. We support the concept of protective bathing beach water quality criteria and consider it important to provide consistent protection.

Before commenting on the specific provisions of the bill, I would like to discuss our current understanding of the problem and tell you about the activities that the agency has done in this area.

As you know, some of the major sources of microbiological pollution that contaminate coastal waters and consequently lead to beach closures or advisories include overloaded sewage treatment plants, discharges of untreated sewage from combined sewer overflows, polluted stormwater runoff from urban and various other nonpoint pollutant sources. We have a number of efforts underway and I will call these "pollution prevention efforts."

We are not talking here about monitoring when the problem is bad but actually preventing the problem. We have a number of efforts in this way.

We are proposing a national policy for managing the combined sewer overflows. We recognize that this problem requires site-spe-

cific solutions. It needs State and local governments to deal with the problem.

We have developed stormwater regulations and have permit application requirements for the largest municipal and industrial sources. We have also requested additional funding for sewage treatment plant construction to ensure adequate treatment for all coastal areas.

Nevertheless, we recognize that, in some cases, pollution of coastal waters is still a problem and additional measures must be taken to protect the public. Monitoring of coastal waters to protect recreational users varies from State to State. Some States have very active monitoring programs, while others do not. We are aware that these inconsistencies have caused concern and confusion in the mind of the public.

In September of 1992, EPA began a negotiated rulemaking process with a diverse group of interested parties to explore the issues of national microbiological criteria monitoring requirements and closure standards for the beaches. We have interviewed State and local health agencies, environmental groups, industry representatives, scientists and other Federal agencies.

We have now completed that first phase of the negotiated rulemaking process. Based on that consultation with more than 50 parties, we, at the agency believe, that a consensus building regulation is the best approach.

We are preparing a plan that includes an estimate of resources required to complete the negotiated rulemaking, and also the resources that are required for the research program to improve our knowledge of microbiological contamination in recreation waters. The funding and timing for negotiating the rulemaking will be considered in the agency with other high priority statutory and court-mandated programs that we at EPA must strive to complete.

Let me now turn to the bill. We agree that the recreational water standards should utilize a consistent approach, as is demonstrated in the Ambient Water Quality Criteria Bacteria Standards of 1986. As I have stated already, consistent microbiological standards require cooperation among all stakeholders.

Section 3 of the bill requires EPA to provide criteria for pathogens to be used in assessing coastal recreational waters. Our 1986 water criteria are a good base to start.

We applaud the bill's efforts to ensure State's adoption of the EPA criteria. However, we offer a modification. We believe that States should adopt published criteria within a fixed time, such as three years. If a State fails to adopt the criteria within three years, EPA's criteria should become applicable water quality standards without further promulgation by EPA.

We agree that we need consistent monitoring. We believe that we need to look at the resources required. We need to consider the fact that States and localities at present are concerned with the cost of compliance with the drinking water regulations and wastewater treatment construction costs.

Marine debris in our coastal waters is also addressed in the bill. We are pleased to let you know that we have a number of activities in this area. We have conducted field investigations of the land-based sources of debris and have prepared reports assessing plastics

problems in U.S. harbors. We are working with NOAA, under an interagency agreement, to fund the annual international beach cleanup activities.

Through a grant with the Center for Marine Conservation, we are funding a project to design statistically validated beach cleanups. This activity is very similar to one of the requirements in the proposed beach bill.

In conclusion, EPA supports the concept and approach of the proposed legislation and we agree with many of its provisions. We recognize that there are science issues that need to be addressed further, to further our understanding of potential pollution problems in recreation waters. However, as I stated, the agency has many activities already in place to address this risk, both in the area of pollution prevention and development of criteria and standards.

This concludes my remarks. I will be happy to answer any questions that you may have.

Mr. ORTIZ. Thank you very much.

We will ask questions once we are finished with the panel.

[The statement of Ms. Stasikowski can be found at the end of the hearing.]

STATEMENT OF VICKIE A. ALLIN, CHIEF, POLICY COORDINATION DIVISION, OFFICE OF COASTAL REVENUE MANAGEMENT, NOAA; ACCOMPANIED BY THOMAS O'CONNOR, CHIEF, COASTAL MONITORING BRANCH, OFFICE OF OCEAN RESOURCES, COORDINATION AND ASSESSMENT

Mr. ORTIZ. We now would like to hear from Ms. Allin.

Ms. ALLIN. Thank you, Mr. Chairman.

Good afternoon. I am Vickie Allin, Chief of the Policy Coordination Division of NOAA's Office of Ocean and Coastal Resource Management. And with me today is Dr. Thomas O'Connor, who is Chief of the Coastal Monitoring Branch in NOAA's Office of Ocean Resources, Conservation and Assessment.

NOAA recognizes the serious problems of coastal pollution and beach and marine debris that threaten the Nation's beaches and coastal waters. We believe that uniform standards and procedures for beach testing and monitoring as called for in H.R. 31 are needed to protect public safety and improve the quality of coastal recreational waters. However, we believe that actions underway or planned under new and existing authorities will accomplish the bill's objectives, as I will explain.

Continuing problems of closed shellfish beds and restricted recreational areas require increased efforts to improve coastal water quality. For that reason, NOAA supports the objective of H.R. 31 to protect public safety and improve water quality, by requiring uniform standards and procedures for beach testing and monitoring.

Standards used to evaluate the public health risks of recreational beach quality should be consistent throughout the United States. In the absence of consistent standards, beaches that are closed by one State's standards could be opened by the standards applied in another State.

The misleading implication is that pollution is greater in a State with closed beaches, while, in fact, the real difference is inconsistent standards.

The scientific basis for the identification and evaluation of indicators of human health risks is relatively sparse. In a series of studies done in the 1970's and early 1980's, involving swimmers at a number of beaches in the U.S. and elsewhere, concentrations of enterococci bacteria in bathing waters appeared to be the best indicator of certain types of disease risk to swimmers.

In the U.S., the long-established practice has been to base public health criteria on concentrations of fecal coliform bacteria, but in these studies, they were one of the worst indicators. As a result, EPA revised its water quality criteria in 1986.

However, as you know, States have been slow to adopt EPA's revised criteria. EPA is now engaged in a negotiated rulemaking process, as you have just heard, under the existing authority of the Clean Water Act, to mandate the adoption of uniform standards for measuring beach environmental quality.

However, neither the fecal coliform nor the enterococci standards address many known human health risks from contact with coastal recreational waters, such as skin rashes, ear and eye infections. In addition, these indicators are not themselves the cause of disease.

Their presence is used to indicate the concurrent presence of microbes that do cause disease, but are very difficult to measure. These difficulties are recognized in Section 5, of H.R. 31, calling on EPA, in cooperation with NOAA, to conduct an ongoing study to develop better indicators for directly detecting the presence of human pathogens in coastal recreational waters.

NOAA strongly supports this provision but believes that expectations should be realistic in view of the complexity of studies and the very limited funding available to conduct them.

Prior to the completion of further studies, NOAA is concerned about a provision of Section 3(a) of H.R. 31, which calls for the development of, "specific numeric criteria calculated to reflect public health risks from short-term increases in pathogens in coastal recreational waters."

For most waterborne human pathogens, especially viruses, we do not have routine methods to measure reliably their concentrations at the levels found in coastal recreation waters. Nor do we know at what concentrations in these waters they pose an appreciable health risk or how the risk varies with environmental factors such as temperature and chemical conditions. Thus, the requirements for specific numeric criteria may focus attention too narrowly on the development of unreliable numbers rather than leaving the flexibility to develop less specific criteria that may better represent the actual situation with regard to our present knowledge.

While NOAA generally believes that the monitoring provisions of H.R. 31 are reasonable, we remain concerned that the bill not mandate new and expensive monitoring requirements on financially strapped State and local governments which may be unnecessary to achieve the objective of the bill. H.R. 31 appears to provide some flexibility by calling for the establishment of minimum require-

ments and by allowing the administrator of EPA to exempt certain coastal recreation waters from the requirements.

NOAA believes that the bill's requirements for development of uniform methods of testing and monitoring beach environmental quality should be a part of the comprehensive water quality assessment and monitoring program which NOAA and EPA are directed to develop pursuant to the recently enacted National Coastal Monitoring Act, or NCMA, Title V of the NOAA Authorization Act of 1992. The NCMA specifically directs that EPA and NOAA should establish monitoring guidelines and protocols to survey water quality in coastal and Great Lakes waters. Thus, the requirement in H.R. 31 for development and issuance of beach water quality monitoring methods is already mandated by the NCMA, and we believe should be developed in coordination with this larger monitoring program.

Setting standards for floatables is also needed. In addition to public health and aesthetic concerns, over a million marine animals are killed yearly by marine debris and vessel damage attributed to marine debris has been costly to repair and poses a real threat to mariner safety.

1991 beach cleanup data show that most types of ocean-based marine debris are declining. By contrast, land-based wastes, including sewage associated waste, although accounting for a very small portion of total wastes, are increasing. Therefore, NOAA supports the development of standards for monitoring floatables in coastal recreational waters as part of a comprehensive national coastal monitoring program.

H.R. 31 calls for the participation of State coastal zone management programs to provide technical assistance to local governments in reducing floatables in coastal recreational waters. The bill would amend Section 306A of the Coastal Zone Management Act to make the reduction of floatable materials and the acquisition of beach cleanup equipment eligible uses of Federal financial assistance under that section.

NOAA opposes this amendment. Section 306A should remain focused on providing limited funding for low-cost construction, urban waterfront revitalization, public access projects, and acquisition of natural areas. In addition, the CZMA already provides an important role for State coastal management programs in controlling floatables through the management of adjacent land uses and through their sponsorship of beach cleanup, adopt-a-beach, and public education programs around the country.

The Coastal Zone Act Reauthorization Amendments of 1990, known as CZARA, expand the role of State CZM programs to address both coastal pollution and marine debris.

First, it recognizes marine debris abatement as one of eight national coastal zone enhancement objectives. States are eligible for competitive coastal zone enhancement grants to "reduce marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris."

NOAA guidance for this new program encourages State CZM programs to provide technical assistance to local governments, manage adjacent land uses to reduce debris, encourage public par-

ticipation in debris reduction efforts, and promote public awareness by sponsoring cleanup events at public beaches.

Second, Section 6217 of CZARA, establishes a new Coastal Nonpoint Pollution Control Program and requires States with approved CZM programs to develop enforceable programs to control urban stormwater, agricultural and other forms of nonpoint source pollution that can introduce human pathogens into the marine environment.

EPA, in consultation with NOAA and other Federal agencies, promulgated management measures for this program in January 1993. NOAA and EPA also issued program development guidance at that time and States have until July 1995 to develop their Coastal Nonpoint Pollution Control Programs.

In summary, NOAA supports the objectives of H.R. 31 to develop uniform standards and methods for testing and monitoring the quality of coastal recreational waters and we support many of the bill's provisions. However, we believe the objectives of the bill are being achieved by actions already underway or planned under existing and new authorities.

Mr. Chairman, that concludes my testimony. I will be glad to answer any questions.

[The statement of Ms. Allin can be found at the end of the hearing.]

Mr. ORTIZ. Thank you. We have a vote in progress at this time. We are going to recess for about 10 minutes and when we come back, we will begin with my good friend, Commissioner Mauro.

[Recess.]

Mr. ORTIZ. We will now resume our testimony from this very distinguished panel, and we have Mr. Mauro.

STATEMENT OF GARRY MAURO, COMMISSIONER, TEXAS GENERAL LAND OFFICE

Mr. MAURO. Mr. Chairman, Members, thank you for inviting me to testify. I have a full text to present for the record, also a text from the Texas Water Commission involved in water quality in Texas to present as well.

Mr. Chairman, as you know, I am Garry Mauro, I am Texas Land Commissioner, also a State elected official. I am probably the one most involved in coastal issues in Texas. I run the prevention and response spill program. We are trying in Texas to join the coastal zone management plan finally. These, and, of course, the Adopt-a-Beach Program involve issues that my office has been vitally involved in.

Rather than go through my full text, let me summarize it because I see you have a lot of technical expertise presented today.

Mr. Chairman, Texas has 367 miles of coastline. Obviously, we are concerned about some bureaucracy off in some other part of the world setting standards for our State, but actually we support H.R. 31 and its goals.

We would say three things: One, we would support a regional approach. It would be as grassroots driven as possible in setting minimum standards, and by that I mean I am really more interested in how the local people think their particular beaches are being used

instead of somebody in Washington. What they think locally of the usage—in other words, numbers of swimmers and that sort of thing. We would also like to make sure the science is proper on minimum standards.

Second, we would like to see a bilateral aspect. As you know, Mr. Chairman, a lot of our beaches in your district are more impacted by what happens in Mexico than they are by what happens in Louisiana, and we would like a bilateral aspect, an international aspect built in for this, so that we could also work on minimum standards for the Mexican waters which impact our beaches so much.

And finally, Mr. Chairman, we want to be sure that this particular bill has as much input from the State's coastal program as possible.

We really believe that grassroots driven programs will work. We support H.R. 31. We would like to work with this Subcommittee to come up with a document that makes sense for not only Texas but the other 23 coastal States, and I agree with Congressman Hughes' comments when he says, it is really time that we set some standards Americans can be comfortable with when they go to the beaches, when they go to the beach, and know they are not going to be affected by toxic waste or sewage waste; when they send their kids into the water, they know that they are safe waters to be swimming in.

I will be glad to answer any questions.

Mr. ORTIZ. That was short and sweet.

Mr. MAURO. Yes, sir.

[The statement of Mr. Mauro can be found at the end of the hearing.]

Mr. ORTIZ. Ms. Dooley.

STATEMENT OF MARLIN DOOLEY, DIRECTOR, ENFORCEMENT COORDINATOR, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

Ms. DOOLEY. Good afternoon. My name is Marlin Dooley. I am the Director of the Office of Enforcement Coordination at the New Jersey Department of Environmental Protection and Energy. As the Director, I oversee the Coastal Cooperative Monitoring Program which several speakers have mentioned today. Commissioner Weiner asked me to attend for him today. He wanted to attend, but business in the State prohibited him.

I thank you for the opportunity to come before you today to offer my support for H.R. 31, the Beaches Environmental Assessment, Closure and Health Act, sponsored by Congressman Hughes. I also note that Governor Florio has submitted testimony expressing his support of H.R. 31 and ask that his statement also be included in the record.

[The statement of Governor Florio can be found at the end of the hearing.]

Ms. DOOLEY. New Jersey implements the most stringent water quality monitoring program in the Nation. This was borne out in a recent report published by the Natural Resources Defense Council. The report notes that New Jersey is the only State to have a State-

wide mandatory beach protection program, including a bacteria standard, a testing protocol, and closure requirements whenever the bacteria standard is exceeded.

Our testing and monitoring program involving 322 ocean and bay locations is complemented by daily aerial surveillance of the coastal and ocean waters to give advance warning of ocean pollution which may be headed toward our shores and to identify pollution sources; and I note that although we have 1,227 miles of coast, we also test the other 151 bay stations.

As noted in the NRDC report, New Jersey's program can be contrasted with 13 other coastal States which either do not monitor regularly or only have limited programs. While not every State would wish to conduct a program as extensive as New Jersey's, I would like to echo Congressman Hughes' statement that we do feel there should be some minimum level of protection offered to all of the Nation's citizens. It would be comforting to know that New Jerseyans are as protected if they go swimming elsewhere in the Nation as they are at home. The enactment of H.R. 31 would promote such protection.

By many measures, New Jersey's program is an unqualified success. I have attached a copy of the 1992 Annual Report of New Jersey's Coastal Cooperative Monitoring Program as an appendix to this testimony. The report outlines the history of the program and statistics for 1992. In 1988, one of the worst years on record for the State's shores and tourism industry, over 700 beach closure days were reported. In 1991, the number had dropped to 10 and in 1992, 27. The increase was due to nonpoint source pollution resulting from five straight days of heavy rain in August. So far in 1993, we have had only two closures.

I want to stress that our program is more than just a closure bill. Another factor which makes our program a success is the fact that the monitoring often initiates an investigation and subsequent elimination or remediation of the source of the pollution.

For example, a couple of years ago, we had a problem where we had very high bacteria counts, and when we conducted an investigation, we found out that a sewer pipe had broken and the sewage had gotten into the storm water pipe and discharged onto the beach; and had we not had our monitoring standards, it would have been much more time and perhaps some illnesses before we found out about that broken pipe.

There is, however, a downside to New Jersey's program in that very often the public and the press evaluate the cleanliness of a State's beaches based on the number of closures which occur. This puts a State in a situation where, because it requires regular testing, there is greater likelihood that elevated readings leading to closures may result. On the other hand, if no or limited tests were performed, no beaches would be closed regardless of the levels of contamination. As a result, even though our program is more protective of public health, our beaches may be perceived as being more polluted than those of other States when in reality they are not.

It would be convenient for New Jersey to back off of our monitoring program so as to ease these perceptual misconceptions. It would cost us less money, and with augmented perception, the State may

even gain some tourism dollars. However, Governor Florio and the legislature have opted on the side of increased public confidence in our waters and protection of public health and have mandated that our monitoring program continue unabated. This decision has paid off in the long run.

As I mentioned earlier, since 1988, the shore's low point year, there has been steady improvement in the quality of our water. In New Jersey we use the nationally accepted criteria for fecal coliform; 99.4 percent of ocean monitoring stations and 96.7 percent of bay monitoring stations met the fecal coliform standard in 1992. This is an improvement over readings of 98.6 and 92.5 percent for 1991. Furthermore, the U.S. EPA has stated that enterococci may be a better indicator for analyzing near-shore water quality.

In 1991, 93.9 percent of the stations monitored were within the surface water quality standard. In 1992, 100 percent met that standard.

Our monitoring program, combined with improvements attained in management of our wastewater and solid wastes in the coastal area have resulted in waters in which our citizens can be confident. Such a program, as embodied in H.R. 31, is essential for all the Nation's waters. We are highly supportive of the individual provisions of H.R. 31. There is great need for the additional study and research on human specific pathogens called for in the bill.

While fecal coliform and enterococci are the prime indicators which are measured, neither is human specific. Likewise, the Interstate Shellfish Sanitation Commission has recently embarked on research into shellfish contamination which should provide additional insight in this area. We are pleased that the bill will require the U.S. EPA to continue this research.

The one change which I recommend to H.R. 31 is to refine the definition of coastal recreation waters to include estuarine as well as marine coastal waters. This will help to ensure the safety and health of those individuals who bathe in our bays, as well as those who choose to recreate in our ocean waters.

In closing, I would like to commend this Committee and Congressman Hughes for his efforts and perseverance in this area. New Jersey's success in coastal monitoring can and should be replicated throughout the Nation. We have been the testing ground and now it is time for the setting of national criteria for testing and closure so that the public can have confidence in all waters in which they swim.

Thank you.

Mr. ORTIZ. Thank you very much.

[Ms. Dooley submitted a statement written by Scott Weiner, commissioner of the New Jersey Department of Environmental Protection and Energy.]

Mr. ORTIZ. Ms. Chasis.

STATEMENT OF SARAH CHASIS, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

Ms. CHASIS. Thank you very much, Mr. Chairman. Thank you for holding this hearing and thank you, Mr. Hughes, for your strong leadership over the years on behalf of beach protection.

NRDC, the Natural Resources Defense Council, for the third straight year has issued a report on ocean and bay beach closings in this country, and what we found this year in this report, Testing the Waters III, a copy of which should be in each of your in or out boxes, is that there were over 2,600 closings or advisories issued at U.S. ocean and bay beaches in 1992. And the cause for these closings was elevated bacteria levels, which indicates the presence of pathogens in human and animal waste; and the sources of that pollution are, principally, overloaded sewage treatment plants, polluted storm water runoff, combined sewer overflows which discharge raw sewage into our coastal waters, faulty septic systems and boating wastes. Those are the principal sources.

And what this really tells us is that coastal pollution continues to be a significant problem in this country; and I just want to underline the health risks that we are talking about here.

Swimmers at marine and bay beaches can contract illness from several disease-causing pathogens that may be found in these polluted waters. Gastroenteritis is the most common swimming-associated illness and can have a variety of symptoms: vomiting, diarrhea, stomach ache, nausea, headache and fever. Eye, ear and respiratory infections are also associated with swimming in sewage-contaminated waters. While swimming in sewage-polluted waters does not usually result in severe or life-threatening illness, such swimming-associated illnesses can take a substantial toll in terms of the convenience, comfort and well-being of the affected individuals and can also result in economic losses to society in terms of lost work, sick days.

Moreover, some cases of gastroenteritis can be serious. Diarrheal disease can be a particular concern for infants, small children and the elderly. People should be able to go to the beach and enjoy swimming in our oceans and bays without worrying about getting sick.

One of the other principal findings of our report this year is that, once again, we found that there are a number of States, coastal States, that have no regular monitoring of beach water for swimmer safety. Those States number eight, and they are concentrated principally in the southeast, the Gulf Coast, and the Pacific Northwest. In addition, there are five States which have limited monitoring, and by that we mean they monitor a limited portion of their coastline or they monitor very infrequently, such as once a year. There are nine States that do a reasonably good job, currently, of monitoring, that means they monitor all or significant portions of their coastline on a regular basis for swimmer safety.

Another key finding is that the standards among the States, and even within States, vary in terms of the indicator organism that is used to determine the presence of the pathogens and the concentration of that indicator organism that will trigger a beach closing or advisory. So you can be swimming in one State that has the same level of pollution as a beach at another State that is closed; and we very strongly believe that people around this country should be able to go to the beach and be assured that they are going to be afforded the same level of protection wherever they may be.

Mr. Chairman, this year for the first time we gathered information on the economics of this issue as well as the data on closings

and monitoring. First of all, we found there are over 160 million visitors to ocean and bay beaches each year, which is a really staggering number; and that the costs of this monitoring are relatively reasonable, very reasonable in light of the recreational interests at stake and the economic interests—New Jersey's program, $22,000, Delaware's program, $35,000 annually.

We have data in our report on New York, southern California, Florida. We tried to get as much information as counties and States would provide us, and we included it all in here. The average cost is somewhere between $1,000, $2,000 per beach mile monitored, and we think that that is well worth the investment compared to the stakes at risk.

When you look at the dollars generated by coastal tourism, the numbers are really staggering. It is billions of dollars per year for many of the key States; and what we are saying is, to protect that investment, take a small part of that and make sure that citizens know that when they swim in the waters, it is healthy.

We strongly support H.R. 31. There is a letter which is circulating to all the Members of this—these subcommittees—which is signed by over 66 national, regional and local groups urging cosponsorship and support for H.R. 31; and we would very much urge this Committee, this Subcommittee and then the full Committee, to take prompt action in reporting this bill out—such action will serve the interests of the American beach-going public.

Thank you very much.

Mr. ORTIZ. Thank you for your testimony.

[The statement of Ms. Chasis can be found at the end of the hearing.]

Mr. ORTIZ. Now we will continue, last but certainly not least, we will hear from Ms. Schrader.

STATEMENT OF BETSY SCHRADER, COORDINATOR, MARINE DEBRIS PROGRAM, CENTER FOR MARINE CONSERVATION

Ms. SCHRADER. Thank you, Mr. Chairman. My name is Betsy Schrader. I am the Marine Debris Program Director for the Center for Marine Conservation. I am accompanied today by Tim Eichenberg, Counsel for the Center. We appreciate this opportunity to testify in support of the Beach Act.

Our testimony today will focus primarily on the issue of floatables, as this is the area in which we have had the most experience.

While floatables, such as syringes and plastic tampon applicators, found on beaches are not directly related to human health, as wastes that are associated with medical waste or sewage discharges, they are indicators of hazards to public health and safety.

We commend the Committee and the sponsor of the legislation for including the monitoring of floatables. These items can tell you a great deal about the status of our beaches and surrounding waters.

Since 1988, the Center for Marine Conservation has coordinated an annual International Coastal Cleanup. Last fall, more than 132,000 volunteers from all over the U.S. spent a day at the beach picking up trash. In 1992, the Cleanup drew citizens from 30 coastal States, three U.S. territories and 31 foreign countries. In the

U.S. alone, nearly 2.8 million pounds of trash were gathered from 4,600 miles of beach during this three-hour event.

But the Cleanup is not just a one-time event for the sole purpose of picking up trash. Volunteers also record on a data card the types and amounts of trash that they are gathering. The data collection aspect of the cleanup enables us to better understand the sources and the pathways of marine debris.

In 1991, among the 5,200,741 debris items catalogued on data cards there were some items that were indicative of inadequate sewage treatment and disposal practices, practices which have a direct bearing on the safety of our recreational beaches. Although condoms and plastic tampon applicators, traceable to inadequately treated sewage, only accounted for 1 percent of total trash items collected, the following States had unusually high rates of sewage associated waste: New Jersey, Massachusetts, Pennsylvania, Rhode Island and New York. All these States logged in with numbers at least three times the national average.

It is interesting to note that the sewage-associated wastes found during the cleanup were more prevalent in areas with coastal combined sewer systems, leading us to surmise that these wastes found their way to our beaches in discharges of combined sewer overflows or CSOs.

In the medical waste category, cleanup volunteers found syringes, hospital ID bracelets and transfusion bottles. In 1991 volunteers reported finding 8,280 plastic syringes on U.S. beaches in just three hours. The number of syringes reported from the three States of particular interest to this Committee were 2,111 in California, 1,105 in Texas, and 160 in New Jersey.

Debris on our beaches is more than just an eyesore. It not only poses a threat to wildlife who may become entangled in it or ingest it. The type of debris that I have just described—tampon applicators, condoms and syringes—also poses a threat to tourism. This was fully realized after debris, particularly medical waste, washed up in massive quantities on northeast beaches during the summers of 1987 and 1988. According to studies following these events, the washups caused an estimated loss of over $1 billion to New Jersey because of decreased tourism.

We have found from the data collected during cleanups that there is a positive correlation between a high percentage of sewage associated waste and relatively high percentages of medical waste, supporting the assumption that some medical wastes enter the marine environment through sewer and storm drain systems.

To address the sewer and storm drain problem, the Center for Marine Conservation is conducting a "Million Points of Blight" campaign. The goal of this campaign is to stencil one million storm drains in the U.S. with a message to educate the public about the connections between storm drains and our national waterways. To date, more than 80 State and local agencies and community organizers are part of the "Million Points of Blight" network and have stencilled over 94,800 storm drains.

Any effort to focus attention on recreational beach safety, particularly attempts to reduce floatables and the related sewage-associated wastes they represent must necessarily look at the problem of CSOs. We urge the Committee to link its efforts on beach safety

with initiatives being undertaken now as Congress reauthorizes the Clean Water Act.

In conclusion, we believe that the Beach Act makes an outstanding contribution to reducing the beach debris problem by encouraging citizens, businesses and local governments to become part of the solution. The Center for Marine Conservation fully supports H.R. 31 provisions for beach testing, monitoring and public notice to help protect public safety. We are concerned, however, that adequate financial support be provided to State and local governments to help them implement the testing and monitoring provisions of the bill.

We thank you for the opportunity to testify and look forward to working with the Subcommittee as you continue your deliberations.

Mr. ORTIZ. Thank you very much.

[The statement of Ms. Schrader can be found at the end of the hearing.]

Mr. ORTIZ. At this time I would like to ask a few brief questions, and then open the floor so that Members can ask if they have any questions. But this is for Ms. Stasikowski—and that is the Mexican-American pronunciation—and other witnesses.

I understand that only eight States have adopted the EPA 1986 criteria. Why have States been so reluctant to use this criteria, and why aren't these criteria mandatory? And once you can answer our question—my question, maybe the other members of the panel will also answer this same question.

Ms. STASIKOWSKI. You are right. There are only eight States and several tribes and territories that have adopted our criteria as standards. EPA has been working with the States on implementation of the toxic pollutant criteria. That has now been completed with our issuance of the national toxics rule.

During the next triennium, we plan to concentrate on working with the States to implement other criteria, including 1986 microbiological criteria. Some of the States are still using the 1976 criteria, which we feel is inadequate.

States—in speculating on some of the reasons why States are not moving to implement our 1986 criteria, it means additional monitoring, it means purchase of equipment.

Mr. ORTIZ. Is there anybody else that would like to tackle these? We won't charge you a penny.

Ms. DOOLEY. In New Jersey we haven't adopted the standard. We use fecal coliform testing, and I think we use the fecal coliform in part because we have years of experience with it, feel that it is appropriate. And our health department and the State feel it is an appropriate indicator for New Jersey. Most of our recreational bathing beaches are affected more by storm drains which have animal and human waste.

But I also note that we do test at 65 stations with the enterococci, and use the EPA standard, and that our tests have shown that we are within the EPA standard along with the other standard. There hasn't been a great difference between the two that we have been able to notice.

Mr. ORTIZ. Mr. Mauro.

Mr. MAURO. Mr. Chairman, what we are doing in Texas, candidly, is we have been more concerned about the oysters than we have

the beaches. In fact, we are using the old standard, the previous standard because what we really extensively test are oyster beds. Because of the lack of concentration on our public beaches and because of the lack of combined storm sewer outlets and because we perceive our beach problem to be more of a toxic waste exposure problem. We have tested the fecal coliform standard; but we have never closed a beach—I think once, 10 years ago. It is just not a big problem right now for us.

Congressman Hughes, you weren't here, but I testified in favor of your bill because I would like the certainty that we don't have a problem. But as I have pointed out, this is a problem that we need to educate people in Texas about and move forward. Most people in Texas haven't thought about this problem, and it is something that we need to do. If we are worried about oysters and we are not worried about our children, I think maybe something iswrong.

Mr. ORTIZ. Anybody else?

Ms. CHASIS. I would just like to comment. A number of States and counties have used both fecal and total coliform for many years and they are comfortable with it and very hesitant to change. What we recommended in our report is that they not necessarily abandon what they have been using if they feel it is better or good, but that they add enterococcus and test, too, for that; because the studies to date have shown that it has the highest correlation with disease-causing organisms.

Mr. ORTIZ. Thank you very much.

Before I go to another question, I would like to give an opportunity to the Members of the panel here. Mr. Hughes, or my good friend and colleague, Mr. Laughlin.

Mr. HUGHES. Thank you, Mr. Chairman; thank you for recognizing me. I want to welcome the members of the panel.

I apologize, Mr. Mauro. We had a vote, as you know, and apparently you testified while I was on my way back from that vote; but I do like what you had to say. I appreciate your comments and I can tell you that your priorities are right and your suggestion is a good one.

We, too, have an oyster industry that is in big trouble, and we are very worried about it; but we also have a lot of bathing beaches. We have long been worried about the impact of polluted waters on our bathers, and that is the right priority.

I also want to recognize Marlin Dooley from our DEPE and thank her for her testimony. We are proud of what DEPE does to make our beaches safer. We went through a very traumatic period of time where a lot of my constituents—businessmen and women, in particular—were very concerned about the fact that attention was being focused upon our polluted waters. We lost close to a billion dollars in tourism revenue; but we benefited in the long run because, as Ms. Dooley has indicated, we have corrected some of the problems. We have had fewer beach closings, and our water quality has never been better.

Our testing assures the bathers that they are safe, and we think the result is good tourism, good politics, and good health standards.

I want to also thank the other panelists for their contributions to this hearing. In particular, I would like to thank the Natural Re-

sources Defense Council for their excellent report, which has once again been very, very helpful.

As I indicated in my statement, I am very, very disappointed with the Environmental Protection Agency and NOAA. I fight for your budgets all the time, and I am disappointed. What you have basically said, is that the goals are worthy and we would like to see this happen, but we think we can do it on our own. Well, you have been saying that for five years, and I have listened to it for five years, and we are not that much further ahead than we were before.

Negotiated rulemaking is just that. You know that it is the latest bureaucratic response to legislation. I would venture to say that we wouldn't be here today if it weren't for H.R. 31 and the predecessors of H.R. 31 and our continuing efforts to focus attention upon a problem.

Now, look, I understand what is meant by negotiated rulemaking, and it is subject to resources and other program priorities. What you basically have said to us once again is that we think it is important, and, yes, we are going to get to it. Well, that is not good enough, because I think that our children and the bathing public deserve better than that.

Now, we haven't had a very good track record in getting the States on board voluntarily, have we? I have to assume that the enterococci standard that you have developed is the best standard. We have, what, eight on board?

Ms. STASIKOWSKI. Right.

Mr. HUGHES. Eight out of how many States?

Ms. STASIKOWSKI. Eight out of 50 States plus territories, Indian tribes.

Mr. HUGHES. Well, I presumed that the standard was for coastal waters and not all the States have coastal areas.

Ms. STASIKOWSKI. No. This is a standard that applies nationwide, for all of the waters.

Mr. HUGHES. Well, is it the best scientific standard that we have right now? Is it the best that science can provide for us?

Ms. STASIKOWSKI. It is the best standard with the present state of knowledge, yes.

Mr. HUGHES. Would you agree that we need to do more to see if we can improve upon that standard?

Ms. STASIKOWSKI. Absolutely.

Mr. HUGHES. Yes. So you support that?

Ms. STASIKOWSKI. Yes.

Mr. HUGHES. You support that provision of the bill?

Ms. STASIKOWSKI. Right.

Mr. HUGHES. Do you support the concept that it shouldn't make any difference where you bathe, whether it is in New Jersey or California or the Gulf of Mexico, that the waters are either swimmable or they are not?

Ms. STASIKOWSKI. Yes, correct.

Mr. HUGHES. Would you agree that the bill has an escape clause that says if States can show that they can conduct the program and assure public safety, then they can opt out with the blessing of the administrator?

Ms. STASIKOWSKI. Yes.

Mr. HUGHES. And that, in fact, the frequency of monitoring standards, the use of water standards, and the proximity to pollutants are all reasonable standards to be used?

Ms. STASIKOWSKI. Yes.

Mr. HUGHES What is it that you find wanting in the bill, aside from the fact that you are going to get to it?

Ms. STASIKOWSKI. As I said, last September, we initiated this negotiated rulemaking, working with various States, local groups, environmental groups; and we feel that because there are differences in the temperatures, frequency of use, and amount of exposure, that we would be more successful if the stakeholders participated in development of the rule with negotiated rulemaking.

Mr. HUGHES. Yes. But you see, negotiated rulemaking means you are going to reach some consensus with individual participants. That isn't going to work.

I mean, frankly, if you were telling me that there is not sufficient flexibility in the bill to take into account long coastlines, differences in use, possible pollution-causing equipment, such as drains that overflow or waste-water treatment facilities that are damaged, if you were telling me that we didn't have enough standards in here, then I could understand that.

But you haven't told me anything. Aside from your concern about one of the criteria that we utilized, that being the specific numeric calculator used to reflect public health risk, which NOAA testified they had some concerns about, you haven't told me anything.

Is there anything in here that would not be in the public interest if we implemented it tomorrow?

Ms. STASIKOWSKI. No. One of the issues with the bill is, if the bill is to be comprehensive and cover bacteria and viruses which you cannot detect using the presently approved—the method that we had in 1986 criteria and the methods available right now, we really do not have sufficient funds to develop the methods.

Mr. HUGHES. The bill provides some additional funds to do things like that. If we waited around here until we found the perfect solution, we would never do anything.

I have heard the same arguments made about a whole host of initiatives I have been involved in over the years concerning ocean policy. We need to continue to strive for the perfect, but we are utilizing what is the best scientific knowledge available, and that is what we are trying to do rationally with this bill. You haven't been very successful in persuading the States to utilize the basic research you have done.

Your track record isn't very good. It demonstrates that leaving it up to the States isn't going to work.

Ms. STASIKOWSKI. One of our comments on the bill, if the bill were to be enacted; we would prefer the use of a "hammer provision;" this means that if the State does not adopt the criteria or standard within three years, that criteria would become a standard automatically.

We have worked with the States to implement toxics criteria into State standards and found that it was very difficult for us to persuade States to adopt the toxics criteria as standards. It took a very

significant amount of effort on the part of the Agency to issue the national toxics rule, to force the States to adopt the standards.

Mr. HUGHES. Frankly, there was a time when we had such a hammer, and we will revisit that issue, as that is a very constructive suggestion. We will look at it.

But getting back to the basic question at hand, the Environmental Protection Agency has primary responsibility for protecting our waters. We have States that are not doing any testing, while we know, without question, that their waters are not always safe. That suggests to me that EPA hasn't done its job.

If it is a research problem, instead of coming in here and explaining that you already have enough jurisdiction to do these things, I would much rather have you come in here and tell us what kind of research assistance you need to try to do your job. But I don't think it is acceptable to come in here and suggest, we want to do it, we are getting to it, and now we have a negotiated rulemaking that we will possibly reach sometime in the future.

I don't think that is acceptable when you are talking about public health.

Ms. STASIKOWSKI. Well, we are proceeding with phase two of the negotiated rulemaking. Part of it is defining the resources that we need to complete the rulemaking and also the resources that are needed for research to expand our criteria to cover other pathogens.

Mr. HUGHES. Why didn't you start that five years ago when we made that an issue?

Ms. STASIKOWSKI. Five years ago the Agency was working on implementing of the 103 toxics criteria. With the resources that the Agency had in this area, we were spending all of them on the toxics criteria program.

Mr. HUGHES. I am being overly critical perhaps, but part of the problem is that you do have a lot of responsibilities, and it takes hearings like this and pieces of legislation like this to get you focused. Hopefully, this legislation will be enacted this time and then we won't have to worry about negotiated rulemaking, because we will have in place the necessary basic standards and a reasonable approach to try to deal with our waters.

Thank you, Mr. Chairman.

Mr. ORTIZ. Mr. Laughlin.

Mr. LAUGHLIN. Mr. Chairman, it is a pleasure to see our Land Commissioner here, Mr. Mauro, and I should observe for all those that may not be aware, there are a lot of Americans in our country that talk about clean beaches and clean water, and they give speeches and they do a lot of talking, but you don't get much action. I have never heard of anyone in our entire country that has done more actual work toward implementing activity to clean up our beaches than I have witnessed on one occasion—the many occasions; that is, Commissioner Mauro himself has been active in picking up the trash, literally tons of waste and trash on our beaches in Texas that have been picked up in its twice-annual, State-wide beach cleanups.

And, Garry, you are to be commended for that; and I am pleased we have this opportunity to recognize the leadership that you have given not only in our State but for the Nation for that. We have

heard witnesses from other States already refer to the Adopt-A-Beach program that you implemented and have given great leadership, and I appreciate it since I represent the longer stretch of Texas coastline—even though my Chairman represents a portion between us—about three-fourths of the Texas coastline.

Which brings the point, Commissioner John Hall in his letter points out that this legislation does not address the bayside shoreline in our States and points out that in Texas we have in excess of 2,200 miles of bayside shoreline.

From your viewpoint, Commissioner, is there a need for this legislation to address the bay side of the shoreline for these problems, or is it just one that the bill ought to address the ocean side, which perhaps is why so many people from New Jersey have been cosponsors of this bill?

Mr. MAURO. Congressman, thank you for those nice words. I don't think there is any doubt. I think one of the other testifiers suggested that we cover estuary areas, and I am convinced that we ought to do that as well.

I think Chairman Hall of our Water Commission was absolutely right. Water quality is water quality; and there are lots of bays that are used for recreational activities, and they probably need to have the same standards as coastal areas have.

Mr. LAUGHLIN. Commissioner, would it help some of the concerns that you have expressed if States were allowed to participate in the development of monitoring programs for the States' respective beaches?

Mr. MAURO. Well, Congressman, keeping in mind the previous exchange, the hammer concept. We like it in Texas, where we give the local people, the State, so many months, so many years to come up with their own plan rather than have an edict on high handed down. You have got to balance that, of course, with having some minimum common standards.

But we would like to see a regional or State approach that is grassroots driven be encouraged. I would have to agree with Congressman Hughes that the current language on its face appears sufficient to allow flexibility, but I think for those of us who have had experience dealing with bureaucracies in the last 10 years, 15 years, you have to do more than allow for the flexibility.

Sometimes you need to build it into the law; and I would like to see that expanded so that there is more requirement to demand grassroots, local, State participation so that we get truly diverse programs that, in effect, hit the common goal of healthful beaches and bay waters for everybody.

Mr. LAUGHLIN. Ms. Stasikowski, do you know if the EPA has any plans to consult or to advise or in any way coordinate these programs with the various States?

Ms. STASIKOWSKI. Yes, when I discussed negotiated rulemaking, as the Commissioner was discussing, the purpose is to involve the grassroots-level organization, the States, local groups—Dr. Schaub, how many States and local organizations have been involved in the first phase of the rulemaking?

Mr. SCHAUB. There are eight States involved and several county associations involved to help—associations involved in the preliminary stages of this negotiation. However, one of the problems we

are finding right now is getting true representation among the States and the county associations so we can have a pool of people that would be more represented as a whole, people who would be involved, have to live with the consequences.

Mr. LAUGHLIN. When I read this bill, it says that monitoring requirements established pursuant to this bill at a minimum will specify the frequency of monitoring based on periods of recreational use of the involved waters. I don't know how you can do this if you don't have the States involved or the local governments—local organizations involved in implementing this requirement.

Ms. STASIKOWSKI. That is absolutely necessary.

Mr. LAUGHLIN. Now, I was somewhat impressed when either Senator Lautenberg or Chairman Hughes talked about the number of people per square mile in New Jersey. I can think of one spot in my district 70 miles long where there are no people on the beach ever, and it occurs to me that what may be good in New Jersey for good water may be too costly for the people in Matagorda and Calhoun Counties that I represent to go out there and test when nobody is going to be out there; and that is what concerns me.

Mr. HUGHES. Will the gentleman yield to me on that?

Mr. LAUGHLIN. Yes.

Mr. HUGHES. That is why the bill is written as it is. If you have areas that have no people using the beaches, there is no need for monitoring.

Mr. LAUGHLIN. The bill doesn't say that, and I do appreciate your observation on that, but my concern, Mr. Hughes, is you are not going tc be the one down there telling the county commissioners and the commissioners court in Calhoun and Matagorda Counties that they don't have to spend money to test the water where there are no people. You see—but these are the people that are sitting at the council table that are going to be implementing this, and if they are not going to take that into consideration, then your bill doesn't do my people any good in those counties.

Now, I have got some counties where there are a lot of people that go to the beach and this should apply. I haven't heard a satisfactory answer that you are going to—as you try to implement rules or something along with this bill, that you are going to have local input.

Ms. STASIKOWSKI. Well, the purpose of negotiated rulemaking was to work with the local groups, the State groups, and to develop the kind of standard that would allow flexibility to the States. One of the reasons that we are concerned about a single numerical standard is that it would not account for differences in the frequency of the use of the beach, differences in temperature, etc. and we need to allow for that flexibility.

Mr. LAUGHLIN. And that is your intention?

Ms. STASIKOWSKI. Yes. Whether it be in a standard development in the negotiated rulemaking or whether it be in implementing the beach law.

Mr. LAUGHLIN. Has EPA given any thought to the cost of this testing per mile or per local government or—I don't know how you are going to estimate it, but have you all come up with any figure on what it is going to cost to do this testing?

Ms. STASIKOWSKI. We have not, but what we have done is relied on Natural Resources Defense Council estimates; and there we know that the figures range from $541 per beach mile to $7,500 per mile, with the average being somewhere between $1,000 to $2,000 per beach mile.

Mr. LAUGHLIN. I knew it would be expensive at some point.

Yes, ma'am.

Ms. CHASIS. Yes, I just wanted to say that in our report on page 23 we summarize the information; and we sent out a survey to all the States and many, many counties around the coast to get this information, and it is summarized here. And when you look—the programs we have summarized are ones which are reasonably comprehensive in terms of monitoring, and the costs are really modest compared to the recreational use of these areas and the economic stake in terms of tourism.

Mr. LAUGHLIN. I agree they are modest when you have several thousand people per square mile or per mile on the beach, but they get exorbitant when you have got 50 or 60 or 70 miles of beach with nobody there; and that is my concern, that you focus on the fact that this legislation is needed in places and not needed in other places, and I want to be sure that you recognize, while the beaches in New Jersey may be quite crowded, there is some beach area in other States that is uninhabited because it is not accessible. That is the problem in the area I am talking about. Unless you have got a nice boat to get across the bay, you don't get there.

And just to give you a reference, I have flown by in helicopters, as I am sure our Commissioner has, for miles and not seen one human being on the boats—beach, and there has been no hurricane or no cold weather. In fact, it has been ideal weather and there is no one out there. That is my concern. What is good for New Jersey and their miles and density of people on the beach will be painful for other areas with no people on the beach.

Ms. CHASIS. There is nothing in this bill that requires that every beach of coastline be monitored. I mean, it specifically requires EPA to establish monitoring requirements that take into account frequency of use, the frequency or the proximity to pollution sources. If there is no pollution source that is close at hand, even if there is a lot of use, then you don't need to monitor.

So I think it is unrealistic to think that this is going to be so heavy handed as to say every mile of beach is going to have to be monitored.

Mr. LAUGHLIN. Is there a provision there that if a State has a good, sound beach monitoring program, such as Commissioner Mauro has outlined that we have in Texas, that a State is exempt?

Ms. CHASIS. The provision basically—it provides that if a State can come in and show that they will not—their program that is in place will not impair compliance with water quality standards and can assure public safety, then they can be exempt. So there is that out.

But I must say that in Texas—Texas does not have a comprehensive monitoring program for its ocean and bay recreational beaches. There are particular programs for Corpus Christi and Galveston County but it does not have a systematic program.

Mr. LAUGHLIN. My point is, and I hope I have made it clear, that I think we need the bill, and it needs to be utilized in those areas where we have people using the beach, and I represent some of those areas. But I also represent, and I know there is other areas where you just don't have any people out there and I don't want to see our counties strapped with testing that is not needed.

Mr. HUGHES. Will the gentleman yield to me?

Mr. LAUGHLIN. Yes.

Mr. HUGHES. We have areas in New Jersey, too, where people don't swim, and we don't test, or monitor. While we have many nice bathing beaches, we also have areas like those in Texas, where people don't swim. Perhaps they are not as expansive as those in Texas, but we are aware of the problems, and that is why the bill was written as it was, based upon use.

Mr. ORTIZ. Gentlemen, we have a Floor vote, but——

Mr. LAUGHLIN. I yield back. I hope I have made my point. I think I have.

Hopefully, when this—some of the people from the EPA come back in time to see how this bill is working as law, we will have a good report.

Mr. ORTIZ. Let me assure the members of the panel that all the written testimony that you have submitted today will be included for the record, and there were some members who were here before, and they had to leave for other business. They may have some other questions, that we will write to you, and we hope that you can respond to the questions from the different members.

[The responses can be found at the end of the hearing.]

Mr. ORTIZ. This concludes the testimony for this panel, and I want to thank you for the valuable testimony and insights that you shared with us today. I think that we have heard interesting testimony this afternoon that will be useful to the Subcommittee as we continue consideration of H.R. 31.

Thank you very much for being with us.

Thank you, and the hearing is adjourned.

[Whereupon, at 4:04 p.m., the Subcommittee was adjourned, and the following was submitted for the record:

SENATOR FRANK R. LAUTENBERG
H.R. 31 BEACH TESTING BILL
JULY 15, 1993

Mr. Chairman, I'm pleased to testify in support of H.R. 31, the BEACH testing bill. The BEACH bill is critical to protecting the health of millions of people who visit our coastal beaches every year.

My colleague Senator Bradley has joined me in introducing the Senate companion bill and we have gained Senators Boxer and Feinstein as cosponsors.

I want to express my appreciation to Congressman Hughes for his initiative and determination to protect the health of the nation's bathers.

Mr. Chairman, in enacting the Clean Water Act in 1972, Congress established a basic goal for the nation -- to make our waters swimmable and fishable. And while water quality has improved since the Act's enactment, we cannot accurately assess our progress toward making waters swimmable, because states do not regularly test beach waters to determine whether they are safe for swimming.

Today, throughout our nation, families are splashing the waves. They believe that they are engaging in a safe activity giving them nothing but joy and recreation.

But what if the water they are swimming in is, instead, giving them a bath of microbes that can make them sick. How do they know?

Here is a case where ignorance is not bliss. All those enjoying the ocean this summer should have the confidence that they are swimming in clean waters.

Yet, several coastal states rarely, if ever, monitor ocean and bay beach water quality for swimmer safety.

Furthermore, the Natural Resources Defense Council (NRDC), in a recently released report, found that even when states do monitor water and discover unsafe bacteria levels, they do not always alert the public or close the beach. A high bacteria level can cause a beach closure in one state, while in another state people may be allowed to swim in the water despite equal health risks.

And EPA's measures to monitor marine water quality underestimate the true health risk faced by bathers. States using existing EPA guidelines decide whether their beach waters are safe for swimming based on monthly averages. Waters may appear safe in the long term, but short-term violations of the public health standard go unrecognized.

These guidelines are not useful to decision-makers who need to determine whether they should allow people to swim at the beach tomorrow or during the coming weekend.

The BEACH bill will help ensure the safety and beauty of coastal beaches across the country by establishing uniform testing and monitoring procedures for bacteria and floatables in marine recreation waters. It also will require that beachgoers are notified through advisories or beach closures when the standard is exceeded, whether they are in my State of New Jersey, which is the only state that mandates such closings by law, or in any other state.

I have heard concerns about the cost of beach monitoring. But NRDC found after surveying 22 coastal states, that the costs of monitoring beach water quality are miniscule when assessed in light of the billions of dollars that tourists spend annually visiting coastal beaches. New Jersey, for example, spends only $200,000 annually for its monitoring and public notification program while reaping $9.5 billion in income generated from coastal tourism.

I intend to work for inclusion of the BEACH bill in the Senate's version of the Clean Water Act. I urge this Committee to support this legislation and join us in recognizing the importance of protecting public health at our nation's beaches.

TESTIMONY OF SENATOR BILL BRADLEY
BEFORE THE U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO,
AND THE OUTER CONTINENTAL SHELF
ON THE BEACHES, ENVIRONMENTAL ASSESSMENT, CLOSURE,
AND HEALTH ACT OF 1993
JULY 15, 1993

Good afternoon, Mr. Chairman, and thank you for the opportunity to testify in support of The Beaches, Environmental Assessment, Closure, and Health Act of 1993. Congressman Hughes' legislation, and a companion bill introduced in the Senate by Senator Lautenberg and myself will reduce the chances that Americans are needlessly exposed to unsafe water at the beach. Americans face hazards enough at home and at work. We must do all we can to ensure that citizens are not exposed to unnecessary risks when on vacation as well.

Vacationers at the beach, enjoying a few days off should not have to wonder whether the water in which they and their families are swimming could make them sick. They should know that the water is safe. This certainty can only come from a rigorous water quality testing program, and a willingness to tell the public when there may be problems. Congressman Hughes' legislation would ensure that the water testing

programs and beach closing rules nationwide are up to the task.

Every summer, I walk the beaches of New Jersey, and I talk to the people I meet about their concerns. New Jerseyans are worried about their beaches and worried about the safety of the waters in which they and their children swim. As you will hear later this afternoon, New Jersey has a comprehensive, effective water testing program. New Jersey does not flinch from its responsibilities to close beaches when, as sometimes happens, it may be unsafe to swim. Some states are not so forthcoming. Some states do not test coastal waters well enough or frequently enough to ensure that their visitors and residents are protected from disease. I am proud to say that New Jersey has gone to great lengths to ensure safety.

Mr. Chairman, I think of this legislation in part as a consumer information measure. As things now stand, each state runs its water testing program in a different way. Information on coastal water quality from the different testing programs can be difficult to make sense of or compare, even for specialists. This legislation, and the companion measure introduced by Mr. Lautenberg and myself, would ensure that testing programs in coastal areas nationwide are similar. National testing guidelines and national beach closure standards will make comparable

information on water quality in coastal areas available to beach-goers. For the first time, Americans will be able to determine which beaches have real problems with dangerous pollution, and they will be able to compare beaches to determine which are the safest.

New Jersey beaches have nothing to fear from these comparisons. New Jersey has, I believe, one of the most extensive and effective water testing programs in the country. New Jersey tests its water on a weekly basis. Many states test their water less frequently, or average the results of repeated tests, thus obscuring short term, intermittent or weather-dependent contamination. In New Jersey we find out about the short term pollution problems, and we take steps to protect people from possible health risks.

Mr. Chairman, some will complain that rigorous testing will do nothing to clean the water. I think that view is short sighted. To reduce the contamination of our coastal waters we must know the dimensions of the problem. Where are our beach waters unsafe? When do the unsafe conditions occur? Answers to those questions can be used, as they already have been in New Jersey, to track down pollution sources and eliminate them. Furthermore, these naysayers underestimate the power of publicity. If a beach is closed because of polluted water, or if people stop visiting the

beach because of reports that the water is unsafe, efforts to find and eliminate the sources of pollution will redouble. And that is what this legislation is really about: cleaning our beaches, eliminating water pollution, and protecting Americans. The stringent testing and pollution guidelines that will result from the passage of this legislation will lead to real improvement in water quality at the beach.

This legislation will ensure that vacationers can protect themselves against exposure to polluted waters by checking reliable and comparable information on pollution nationwide. States should not be hiding from their water pollution problems, but should be facing them with the honesty and courage shown by New Jersey. Consistent, regular testing will ensure that polluted waters are cleaned up, not covered up.

TESTIMONY OF
MARGARET J. STASIKOWSKI
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO,
AND THE OUTER CONTINENTAL SHELF
AND THE
SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

Good afternoon, Chairmen and Members of the Subcommittees. I am Margaret J. Stasikowski, Director of the Health and Ecological Criteria Division, Office of Science and Technology, in the Office of Water, U.S. Environmental Protection Agency (EPA). I am accompanied today by Stephen A. Schaub, Senior Microbiologist in my Division. Thank you for the invitation to be here today and to have the opportunity to discuss H.R. 31, the Beaches Environmental Assessment, Closure, and Health Act of 1993.

Introduction

Everyone should be able to enjoy a day swimming at our nation's beaches without having to worry about health risks from infectious diseases. The Agency understands the importance of our coastal waters as a resource for recreation by visitors from around the world. Tourism at our coastal areas is also important commercially as American and international visitors alike generate billions of dollars annually. As the Federal agency with primary responsibility for implementing the Clean Water Act, EPA is fully committed to achieving the goal of maintaining fishable and swimmable waters nationwide.

We support the concept of protective bathing beach water quality criteria and consider it important to provide consistent protection of the quality of U.S. coastal and Great Lakes recreational waters. The increased population of our coastal areas due to the constant migration of industry, business, and households places continually increasing pressure on the environmental quality of these waters. Before commenting on the specific provisions of the bill, I would like to discuss our current understanding of the problem and the Agency's plan to address its various aspects.

Current Activities to Address Microbiological Pathogens

Some of the major sources of microbiological pollution that contaminate coastal waters and consequently lead to beach closures or advisories include overloaded sewage treatment plants, discharges of untreated sewage from combined sewer overflows (CSOs), polluted stormwater runoff from urban and various nonpoint pollutant sources. The Agency has a number of efforts underway that will help to reduce contamination from these sources and bring about permanent improvements in coastal water quality.

The Agency has proposed a draft national policy for managing CSOs, that recognizes their site-specific nature and the needs of State and local governments to deal with them. We have developed stormwater regulations and have permit application requirements for the largest municipal and industrial sources. We have

also requested additional funding for sewage treatment plant construction to ensure adequate treatment for all coastal areas.

In addition, the Coastal Zone Act Amendments of 1990 have provided a strong approach for States to control nonpoint source pollution in their coastal zone.

Nevertheless, we recognize that, in some cases, pollution of coastal waters is still a problem and additional measures must be taken to protect the public. Monitoring of coastal waters to protect recreational users varies from State to State. Some States have active monitoring programs, while others do not. We are aware that these inconsistencies have caused concern and confusion in the mind of the public.

Negotiated Rulemaking

In September 1992, we began a fact finding study that is the first stage feasibility assessment of a negotiated rulemaking process with a diverse group of interested parties to explore the issues of national microbiological criteria, monitoring requirements, and closure standards for beaches. Included in our interviews were State and local health agencies, environmental groups, industry representatives, scientists and other Federal agencies. This first phase was completed during June of this year. Based on the consultations with more than 50 interested parties, there are indications that a negotiated, consensus building

regulation is the best approach. It appears that proceeding to the second phase of negotiation might be a beneficial rulemaking effort.

During the discussions, concerns were raised whether uniform, comprehensive, national microbiological standards are technically feasible given the diversity of geographic and aquatic conditions nationwide. Variations in potential pollutant types and sources, climatic differences, and levels of salinity are important considerations in this regard. Limitations in available scientific information were also discussed.

The funding and timing for new beach regulations brought about through this legislation or through negotiations with stakeholders must be considered with other high priority statutory and court-mandated programs which EPA must strive to complete. If, after careful consideration of all factors involved, a national program is deemed appropriate, a continuation of the negotiated rulemaking could be pursued to produce a consensus agreement on recreational water criteria or standards, monitoring approaches, and beach notification/closure and reopening guidelines.

As you can see, with the existing resources, we have a full agenda underway to protect our coastal waters for all Americans and our international visitors. In some cases it is a matter of continuing implementation of existing programs; for others we must seek new solutions to the remaining problems. Some States are doing a very commendable job in monitoring recreational waters and in protecting beachgoers from potentially harmful pollution. We encourage

them to continue and invite the other States to join in on the protection of our recreational waters. We invite and actively encourage the involvement of all those interested in this process.

EPA Perspectives on the Proposed Legislation

Let me now turn to the provisions of H.R. 31, the B.E.A.C.H. bill. We agree that recreational water standards, monitoring methods, and pollution notification requirements to safeguard swimmers should utilize a consistent approach as demonstrated in the revised EPA Ambient Water Quality Criteria for Bacteria prepared in 1986. In the interest of public health, it is important that information on harmful microbiological pathogen pollution be conveyed to all potential recreational water users by either informing them of the hazards or preventing their contact with these disease causing pollutants through the States efforts in public notification or closure of beaches.

As I have already stated, prevention of recreational water pollution and the establishment of consistent microbiological standards, monitoring methods, and notification/closure criteria and their application in the protection of public health is a task that requires cooperation among all stakeholders. It is important that the science be developed to provide the data base on the microbiological pathogens of concern. This would include the nature and fate of the organisms in recreational waters, the development of rapid, reliable and cost effective methods to detect and quantify their presence, the determination of their infectious dose, and the

assessment of health risks to recreational users. Leadership by State and local governments as well as persons benefiting from the recreational water resources is essential and should be the driving force in the establishment and implementation of standards, monitoring, and enforcement of microbiological protection based upon the scientific data. The stakeholders must be involved in the difficult decisions of recognizing the hazards, determining acceptable risk levels, and providing the means to reduce pollution or to notify/close recreational areas to protect the public's health.

Water Quality Criteria and Standards

As with the earlier beach bills passed by the House of Representatives, Section 3 of the bill requires EPA to provide criteria for pathogens to be used in assessing coastal recreation waters. EPA's existing 1986 recreational water criteria (using enterococci and E. coli bacteria) are designed to be protective for pathogenic microorganisms that cause acute gastrointestinal diseases which originate in human fecal matter (such as would occur from sewage sources). These illnesses are caused by exposure principally through oral uptake from immersion of the head in water.

Additional studies would be needed to identify indicator organisms, perform epidemiological studies, and establish criteria that would be protective for other types of fecally transmitted microbial diseases, such as hepatitis A, and other viral and protozoan diseases.

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In addition to microbial pathogens that cause gastrointestinal illness, recreational water exposure can also transmit many other microbial pathogens that cause eye, ear, nose, throat, respiratory tract, and skin infections. This too should be an area of further research. Several previous and ongoing epidemiological studies of recreational waters in the U.S. and Great Britain indicate that the incidence of these other microbial diseases may be similar to the incidence of acute gastrointestinal diseases. Some non-gastrointestinal disease causing organisms occur and grow naturally in water, others are transmitted due to the close proximity of bathers in crowded areas, some are from animal sources and yet others occur along with the fecal pathogens from sewage contamination.

It is important that as we expand our knowledge of both sewage borne and other microbial pathogens, we continue with our existing indicators in developing control strategies, monitoring methods and risk assessments. As the new data and analytical methodologies come about they should be used to improve the framework of our strategies, monitoring methods, and risk determinations to enhance our ability to protect the health of recreational water users.

National microbiological criteria would provide consistent health protection of recreational water users. However, as we consider national criteria, we need to allow for flexibility in the State-to-State application of the criteria to account for the diversity of geographic and aquatic conditions nationwide. EPA recommends that initial efforts should center around the States' adoption of existing EPA ambient water quality criteria as minimal standards, possibly with minor

adjustments to reflect health effects and monitoring data developed since the 1986 criteria. To date only eight States, the District of Columbia, and several territories and native american tribes have adopted the 1986 criteria.

We applaud the bill's efforts [section 3(b)(2)] to ensure State adoption of EPA criteria published under section 304(a)(9) of the Clean Water Act, however we offer a modification. We believe the States should adopt EPA's published criteria within a fixed time, such as three years, after EPA publishes updated guidance. If a State fails to adopt the criteria within three years, EPA's criteria should become applicable water quality standards, without further promulgation by EPA. We believe adoption of criteria in this way will be the most cost effective and expeditious route to ensure adequate protection of coastal recreational waters.

Coastal Beach Water Quality Monitoring

EPA agrees with the need for consistent monitoring practices as indicated in H.R. 31. State and local governments should have adequate, consistent monitoring practices. However, experience has shown us that there has been resistance to the transition from the old criteria and monitoring methods. Discussions with State and local governments indicate they may be reluctant to invest in new equipment and training in order to use procedures with which they are unfamiliar.

Nonetheless, we will continue to encourage the State and local governments to change to improved monitoring methods and criteria. We believe these improved

tools are more protective of human health, despite the cost to State and local governments. New legislation should consider the funding burden on State and local governments to adopt any new beach criteria, monitoring methods, closure requirements, and the seasonal beach monitoring implementation. A 1993 report by the Natural Resources Defense Council shows that current costs, from a sampling of States and counties, to conduct microbiological monitoring programs, range from $541 to $7,500 per mile of beach, annually.

A shortcoming of current methods to detect microbial pathogens is that they all require 24 hours or longer to provide results. This analysis period reduces the ability to respond in a timely fashion with closures or other types of notification to protect recreational users. There are some existing efforts to develop new microbial indicators to shorten the required monitoring time.

We also have identified the need to explore other indicator organisms and supplemental indicator systems such as rainfall events during which pollutants can be washed into recreational waters. With these supplemental methods we hope to shorten the detection time, broaden the range of fecal pathogens that can be monitored, and provide a capability to monitor the non-fecal pathogen risks. Many of these efforts may require development and standardization of new sampling and analysis methods, and the subsequent verification of their relationships to the incidence of disease. The time and expense required to establish this information would be considerable and constitute a significant EPA research program. It is estimated that final comprehensive EPA standards, monitoring methods, and

notification procedures could cost a total of 3-5 million dollars and could take 3-4 years or longer. Implementation would also have a significant cost. There currently are no resources budgeted for this purpose, and funding such a program would require significant reprogramming.

The EPA supports State efforts to provide recreational water pollution notification requirements through State and local agencies as indicated in the bill. It is appropriate that they inform recreational water users of microbiological hazards through public notice.

Just as we now have criteria endpoints for States to use to require notification or closure of contaminated beaches, we also will need guidelines for States to use in determining when recreational waters can be reopened based on appropriate measurements of water quality.

Floatables and Marine Debris

Marine debris in our coastal waters has been a concern that we are addressing at EPA, especially plastic debris and other floatable materials and we are pleased to see it addressed in H.R. 31. We are currently working under the Clean Water Act regarding the control of floatable debris from CSOs and stormwater discharges. The Agency also has a number of actions underway to assess, monitor, and control sources of marine debris.

EPA has conducted field investigations of the land-based sources of debris and prepared reports assessing plastics problems in U.S. harbors. To characterize

the floating debris in U.S. harbors, EPA surveyed the harbors of Boston, New York, Philadelphia, Baltimore, Norfolk, Miami, Houston, San Juan, Mayaquez, Seattle, Tacoma, San Francisco, Oakland, and Honolulu. Among other things, we found that plastics comprised over 80% of the debris.

We also noted during these field surveys that sewage, medical and drug related debris was found to be most abundant in several cities like New York, Boston, and Philadelphia, which do not have upgraded combined sewer systems where raw sewage and storm water is discharged into the harbors during wet weather. We also found substantial amount of marine debris in Baltimore which does not have CSOs. Materials released from several of the CSOs in two cities, Philadelphia, PA, and Boston, MA, were sampled, identified, and quantified. Storm drains have also been sampled to determine their significance as a source of marine debris. This information on sources and the presence of debris in U.S. harbors is useful as an educational tool. It will also be helpful in the future to identify the types of technologies needed to control debris released from CSOs and storm sewers.

EPA is working with NOAA through an Inter-agency Agreement (IAG) to fund the annual international beach cleanup activities organized by the Center for Marine Conservation (CMC) and to maintain several offices for information distribution. In order to better understand the impacts of our actions on the debris problem, EPA is developing a statistically designed beach sampling methodology to be able to make a statistically valid trend assessment.

Through a grant to CMC, EPA is funding a project to design these statistical beach cleanups. This activity is very similar to one of the requirements in the proposed Beach Bill. This project involves local volunteer groups, "Citizen Pollution Patrols" which are organized to perform uniform assessment, monitoring and reporting of marine debris. The first year of this pilot study has been completed, and the results indicate that it is possible to use properly trained volunteers to collect statistically valid information on marine debris. This study we've undertaken represents an excellent opportunity to develop a national methodology for the sampling of marine debris and to obtain reliable data to better determine and identify trends. EPA and NOAA are organizing a workshop, to be held in November 1993, to discuss this new methodology and those used in other programs to reach national recommendations on a single methodology based on all available data.

Regarding the proposed EPA report to Congress under section 5(b) of this bill, we would like to suggest that because floatable materials are not indicators of human-specific pathogens in coastal recreational waters, the requirement of section 5 (b)(2) on floatables should be included as a requirement of section 406 (c)(1) instead. This would keep the Federal floatables requirements of the bill in one place.

Conclusion

In conclusion, EPA supports the concept and approach of this proposed legislation and we agree with many of its provisions. We recognize that there are science issues that need to be addressed to further our understanding of potential pollution hazards to recreational waters. However, as I have stated, the Agency has many activities already in place to address this risk to the health of our recreational water users, and as with any new program, we must always weigh these risks against other competing demands on our resources.

Chairmen, this concludes my statement. I am happy to answer any questions you may have.

STATEMENT OF VICKIE ALLIN
CHIEF, POLICY COORDINATION DIVISION
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO,
AND THE OUTER CONTINENTAL SHELF
AND THE
SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

July 15, 1993

Messrs. Chairmen and Members of the Subcommittees:

Good afternoon. I am Vickie Allin, Chief of the Policy Coordination Division, Office of Ocean and Coastal Resource Management in the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. With me is Dr. Thomas O'Connor, Chief of the Coastal Monitoring Branch, Office of Ocean Resources, Coordination and Assessment, also in NOAA's National Ocean Service. I am pleased to appear before you to discuss H.R. 31, The Beaches Environmental Assessment, Closure and Health Act of 1993.

NOAA recognizes the serious problems of coastal pollution and beach and marine debris that threaten the Nation's beaches and coastal waters. We believe that uniform standards and procedures for beach testing and monitoring, as called for in H.R. 31, are needed to protect public safety and improve the quality of

coastal recreational waters. However, we believe that actions underway or planned under new and existing authorities will accomplish the bill's objectives as explained within my testimony.

Continuing problems of closed shellfish beds and restricted recreational areas require increased efforts to improve coastal water quality. Thirty-seven percent of the Nation's waters classified for shellfishing had some form of harvest restriction during 1990, an increase of 5 percent over 1985. Runoff from land use activities in upland areas can contribute pathogens, nutrients and toxic chemicals to coastal waters. These nonpoint source pollutants present threats to both human health and living marine resources. Harmful point source discharges and combined sewer overflows, which can discharge a mixture of raw sewage, stormwater and toxins into aquatic habitats, are also continuously degrading our coastal areas.

With coastal county population densities already more than 10 times the national average and growing at a faster rate than inland areas, coastal pollution sources will continue to increase. For example, by the year 2000, NOAA estimates that sewage will increase 18 percent over 1980 levels, trash will increase 19 percent over 1980 levels, and there will be 7 million more houses (an increase of 23 percent) and 11 million more cars (a 27 percent increase) in coastal counties.

At the same time, the use of coastal areas for recreation continues to grow. Marine recreation already is the fastest-growing economic sector in many coastal regions. Demands for maintenance of a high-quality coastal recreation environment will increase significantly.

Marine debris has been recognized as a problem which significantly affects our coastal and marine resources. Marine debris gained national attention during the summers of 1987 and 1988 as a result of the medical waste washups and beach closures along the East coast. Although these washups and closures represent a very small fraction of the marine debris problem, they can be tremendously costly to local economies. (Direct losses in tourism revenues in New York and New Jersey during 1988 resulting from marine debris were estimated to be in excess of $1 billion.) Additionally, recent (1991) data from nationwide beach clean-ups indicate that sewage associated wastes, although accounting for less than 1 percent of total marine debris, have increased from 0.38 percent in 1988 to 0.53 percent in 1991.

For these reasons, NOAA supports the objective of H.R. 31 to protect public safety and improve the environmental quality of coastal recreational waters, by requiring uniform standards and procedures for beach testing and monitoring. Standards used to evaluate the public health risks of recreational beach quality should be consistent throughout the United States. In the

absence of consistent standards, beaches that are closed by one state's standards could be opened by the standards applied by another. The misleading implication is that pollution is greater in the state with closed beaches, while, in fact, the real difference is inconsistent standards.

The scientific basis for the identification and evaluation of indicators of human health risks is relatively sparse. In a series of studies done in the 1970s and early 1980s, involving swimmers at a number of beaches in the U.S. and elsewhere, the concentrations of enterococci bacteria in bathing waters appeared to be the best indicator of certain types of disease risk to swimmers. In the U.S., the long-established practice has been to base public health criteria on concentrations of fecal coliform bacteria, but the studies noted they were one of the worst indicators. As a result, EPA revised its water quality criteria in 1986. However, states have been slow to adopt EPA's revised criteria. EPA is now engaged in a Negotiated Rulemaking process under the existing authority of the Clean Water Act to mandate the adoption of uniform standards for measuring beach environmental quality.

However, neither the fecal coliform nor the enterococci standards address many known human health risks from contact with coastal recreational waters, such as skin rashes and eye and ear infections. In addition, these indicators are not the cause of

disease. Their presence is used to indicate the concurrent presence of microbes that do cause human disease, but are very difficult to measure. These difficulties are recognized in section 5 of H.R. 31 calling on EPA, in cooperation with NOAA, to conduct an ongoing study to develop better indicators for directly detecting the presence of human pathogens in coastal recreational waters. NOAA strongly supports this provision. However, expectations should be realistic. The bill authorizes $1 million for FY 1994 and FY 1995 for the administration of the Act, including this study. Even if the full amount were to be appropriated, it would take some time to complete a study of this nature.

Prior to completion of further studies, NOAA is concerned about a provision of Section 3(a) which calls for the development of "specific numeric criteria calculated to reflect public health risks from short-term increases in pathogens in coastal recreational waters...." For most water-borne human pathogens, especially viruses, we do not have routine methods to measure reliably their concentrations at the levels found in coastal recreation waters. Nor do we know at what concentrations in these waters they pose an appreciable health risk or how this risk varies with environmental factors such as temperature and chemical conditions. Thus, the requirements for specific numeric criteria may focus attention too narrowly on the development of unreliable numbers rather than leaving the flexibility to develop

less specific criteria that may better represent the actual situation with regard to our present knowledge.

While NOAA generally believes that the monitoring provisions of H.R. 31 are reasonable, we remain concerned that the bill not mandate new and expensive monitoring requirements on financially strapped states and local governments which may be unnecessary. H.R. 31 appears to provide some flexibility by calling for the establishment of minimum requirements and by allowing the Administrator of EPA to exempt certain coastal recreational waters from the requirements.

NOAA believes that the bill's requirements for development of uniform methods of testing and monitoring beach environmental quality should be a part of the comprehensive water quality assessment and monitoring program which EPA and NOAA are directed to develop pursuant to the recently enacted National Coastal Monitoring Act (NCMA), Title V of the NOAA Authorization Act of 1992. The NCMA specifically directs that EPA and NOAA should establish monitoring guidelines and protocols to survey water quality in coastal and Great Lakes waters. Thus, the requirement in H.R. 31 for development and issuance of beach water quality monitoring methods is already mandated by the NCMA, and we believe should be developed in coordination with this larger monitoring program.

Setting standards for floatables is also needed. In addition to public health and aesthetic concerns, over a million marine animals are killed yearly by marine debris and vessel damage attributed to marine debris has been costly to repair and poses a real threat to mariner safety. In 1985, NOAA established the Marine Entanglement Research Program (MERP) in response to public concern over the impacts of marine debris on wildlife. One of the primary goals of this program has been to develop a better understanding of the origin, amount, distribution, fate and effects of plastic and other synthetic debris in the marine environment. With that understanding, MERP has been able to develop and implement efforts in education and mitigation.

Through these and other such efforts, 1991 beach clean-up data show that most types of ocean-based marine debris (i.e., recreational fishing and boating waste, commercial fishing waste, operational wastes and galley wastes) are declining. By contrast, land-based wastes, including sewage associated wastes, although accounting for a very small portion of total wastes, are increasing. Therefore, NOAA supports the development of standards for monitoring floatables in coastal recreational waters as part of a comprehensive national coastal monitoring program.

H.R. 31 calls for the participation of state coastal zone management programs to provide technical assistance to local

governments in reducing floatables in coastal recreational waters. The bill would amend Section 306A of the Coastal Zone Management Act of 1972 (CZMA) to make the reduction of floatable materials and the acquisition of beach and coastal recreation water clean-up equipment eligible uses of Federal financial assistance under that section.

NOAA opposes this amendment. Section 306A should remain focused on providing limited funding for low-cost construction, urban waterfront revitalization, public access projects, and acquisition of natural areas. In addition, the CZMA already provides an important role for state coastal management programs in controlling floatables through the management of adjacent land uses and through their sponsorship of beach clean-up, adopt-a-beach, and public education programs around the country. The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) expand the role of state CZM programs to address both coastal pollution and marine debris.

First, it recognizes marine debris abatement as one of eight national coastal zone enhancement objectives. States are eligible for competitive coastal zone enhancement grants to "reduce marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris." NOAA guidance for this new program encourages state CZM programs to: provide technical assistance

to local governments; manage adjacent land uses to reduce debris; encourage public participation in debris reduction efforts; and promote public awareness by sponsoring clean-up events at public beaches.

Second, Section 6217 of CZARA establishes a new Coastal Nonpoint Pollution Control Program (CNPCP) and requires states with CZM programs to develop enforceable programs to control urban stormwater, agricultural and other forms of nonpoint source pollution that can introduce human pathogens into the marine environment. EPA, in consultation with NOAA and other Federal agencies, promulgated management measures for this program in January, 1993. NOAA and EPA also issued program development guidance at that time and states have until July, 1995 to develop their CNPCP programs.

In summary, NOAA supports the objectives of H.R. 31 to develop uniform standards and methods for testing and monitoring the quality of coastal recreational waters, and we support many of the bill's provisions. However, we believe the objectives of the bill are being achieved by actions already underway or planned under existing and new authorities.

Messrs. Chairmen, that concludes my testimony. We look forward to working with you and your staff on this and other issues

related to improving our coastal waters. At this time I would be glad to answer any questions the Subcommittees may have.

Testimony of
TEXAS LAND COMMISSIONER GARRY MAURO
to the
HOUSE MERCHANT MARINE COMMITTEE
SUBCOMMITTEE ON OCEANOGRAPHY AND THE GULF OF MEXICO
Washington, D.C.
July 15, 1993

Mr. Chairman:

Thank you for the opportunity to speak to you about the Texas perspective on H.R. 31, the Beaches Environmental Assessment, Closure and Health Act.

My name is Garry Mauro, and I am the Texas Land Commissioner.

As such, I am responsible for more than 20.5 million acres of public land, including four million acres of submerged coastal lands.

Because of this, my office, the General Land Office, is actively involved in coastal issues.

We are the lead state agency for oil spill prevention and response. My staff is hard at work drafting a comprehensive coastal management plan for federal approval. Our Adopt-A-Beach program is internationally recognized as a model of volunteer involvement.

Much of my tenure as Land Commissioner has been spent working to preserve and protect our coastal resources. I welcome the opportunity to comment on this bill.

I also want to append to this testimony the comments from the Texas Water Commission regarding some of the technical issues involved in monitoring recreational waters.

As I read it, the Hughes Bill seems well suited for the beaches of the northeast, especially states such as New Jersey, New York, Maryland and Delaware.

Because of the large population of these states and the proximity of population centers to the coast, beaches in these states have to deal with a high-density of visitors per mile.

Because these state are contiguous, their beaches often share the same problems across state borders.

I applaud the authorities who had the guts to stand up and tell the truth about the hazards on their beaches. Their beach resort industry should not be made to suffer because of them.

That said, Texas has a special perspective on this bill and the problems it seeks to address.

Texas has 367 miles of Gulf shoreline. Between the Gulf and the mainland stretches the longest barrier island in the world.

It is impossible to identify one specific area of our coastline as being representative of the whole. The Texas coastal environment is simply too diverse to be able to do that.

Our Gulf is not an industrial sewer, as some would suggest, but it's not the Garden of Eden either.

The fact is that you can find examples of both extremes, and many in-between cases as well.

The huge expanse of Texas shoreline also means that Texas beaches are not as swimmer intense as their East coast counterparts.

An East coast beach may have 150 swimmers per hundred yards. There are long stretches of Texas beach where there are not 150 swimmers per hundred miles.

To sum up: while I do want to see uniformity in minimal standards for health and public safety, because of the size and diversity of our national coastline I doubt that uniform procedures for assessment and enforcement will be practical.

In Texas, our priorities start with human health and extend into sustaining the environmental and economic resources that are dependent on clean water.

We have some areas that are crying for help and what little money we have often needs to deal with those real, already documented problems.

Lavaca Bay, for instance, has serious contamination from mercury—a lethal substance. There are reports of PCBs in the Arroyo Colorado, which feeds into the Laguna Madre.

We need to spend wisely.

H.R. 31 requires a 50 percent match by states of what the federal government may or may not decide to spend. That is too onerous a burden to place on on my state in these fiscally tight times.

I don't want to sound as if Texas is stubbornly unwilling to address the problems this bill targets. In fact, the reverse is true.

Our state is currently drafting a coastal zone management plan for federal approval. We're still about a year away from completion.

Our Oil Spill Prevention and Response Program involves strict standards and stiff penalties for polluters. Since the program began two years ago, we have dealt effectively with 1,996 oil spills.

We've worked hard to stem the flow of marine debris that washes onto our shores. We lead the nation in volunteer participation on our twice-yearly statewide beach cleanups.

We're not unwilling. We're just not quite ready to invest so heavily on monitoring when we have more serious problems still unaddressed and vital remediation programs underfunded.

I'd like to make some suggestions that would make this bill more realistic for Texas, given the factors I've discussed.

First, proceed with Mid-Atlantic and other regions that feel they are ready to work under a national standard.

In the meantime, have federal scientists identify zones of exposure, based on ocean currents, temperatures, intensity of human use, etc., and have them recommend procedures to follow within those

zones to meet the national standard.

Because of ocean currents the Texas zone might need to include the Republic of Mexico, probably from our sister Gulf state Tamaulipas south even to Vera Cruz and Campeche.

The bill should be amended to permit and encourage cooperation on these issues with the government of Mexico.

Once zones have been determined by federal scientists, the law should then permit affected states to agree to work together to design and implement their part of the program.

If states do not enter after a reasonable period, the federal government should proceed with study and monitoring. If serious problems are found, mandated entry into the program should be permitted.

While the decision is not mine alone to make, I think you will find Texas ready to work immediately on a marine debris monitoring and cleanup program based on voluntary citizen participation.

We already do much of this in cooperation with the Center for Marine Conservation.

Finally, as the Committee well knows, let me stress again that the quality of the Gulf waters of Texas is a product of what happens in Mexico as well as what happens in Texas.

If there is one thing I've learned in my years working on MARPOL and the marine debris issue in the Gulf, it's that you cannot deal with most ocean problems unilaterally.

The currents of the Gulf don't recognize boundaries.

Because of this special situation, we insist there be a Bilateral Commission to create an avenue for coordinated research, remediation, regulation and enforcement on a wide range of resource management matters.

As NAFTA nears and coastal industry prospers, the cities grow, the industry discharges increase and the threat of a maritime calamity increases.

Put a bilateral planning element in this bill, that will be progress.

But keep in mind that we still have no effective mechanism to work with Mexico on our stewardship of the Gulf.

Thank your for your time. I would be happy to answer any questions you have.

BEACHES ENVIRONMENTAL ASSESSMENT, CLOSURE AND HEALTH ACT OF 1993
HR 31

TESTIMONY BY
SCOTT A. WEINER, COMMISSIONER
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

BEFORE THE HOUSE SUBCOMMITTEES
ON
OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF
AND
ENVIRONMENT AND NATURAL RESOURCES

JULY 15, 1993

Good afternoon. My name is Scott Weiner, Commissioner of the New Jersey Department of Environmental Protection and Energy (DEPE). I thank you for the opportunity to come before you today to offer my support for HR 31, the "Beaches Environmental Assessment, Closure, and Health Act" sponsored by Congressman Hughes.

New Jersey implements the most stringent water quality monitoring program in the nation. This was borne out in a recent report published by the Natural Resources Defense Council. The report notes that "New Jersey is the only state to have a statewide mandatory beach protection program, including a bacteria standard, a testing protocol and closure requirements whenever the bacteria standard is exceeded". Our testing and monitoring program involving 322 ocean and bay locations is complemented by daily aerial surveillance of the coastal and ocean waters to give advance warning of ocean pollution which may be heading towards our shores and to identify pollution sources.

As noted in the NRDC Report, New Jersey's program can be contrasted with 23 other coastal states which either do not monitor regularly or only have limited programs. While not every state would wish to conduct a program as extensive as New Jersey's, we do feel that there should be some minimum level of protection offered to all of the nation's citizens. It would be comforting to know that New Jerseyans are as protected if they go swimming elsewhere in the nation as they are at home. The enactment of HR 31 would promote such protection.

By many measures, New Jersey's program is an unqualified success. I have attached a copy of the 1992 Annual Report of New Jersey's Cooperative Coastal Monitoring Program as an appendix to this testimony. In 1988, one of the worst years on record for the state's shores and tourism industry, over 700 beach closure days were reported. In 1991, the number had dropped to ten and in 1992, 27. (The increase was due to non-point source pollution resulting from five straight days of heavy rainfall in August 1992.) So far in 1993, there have been no health-based closures to date. Another factor which makes our program a success is the fact that the monitoring often initiates the investigation and subsequent elimination or remediation of the source of the pollution.

There is, however, a down side to New Jersey's program in that very often the public and the press evaluates the cleanliness of a state's beaches based on the number of closures which occur. This puts a state in a situation where, because it requires regular testing, there is greater likelihood that elevated readings leading to closures may result. On the other hand, if no or limited tests were performed, no beaches would be closed regardless of the levels of

contamination. As a result, even though our program is more protective of public health, our beaches may be perceived as being more polluted than those of other states when in reality they are not.

It would be convenient for New Jersey to back off on our monitoring program so as to ease these perceptual misconceptions. It would cost us less money and, with the augmented perception, the State may even gain some tourism dollars. However, Governor Florio and the legislature have opted on the side of increased public confidence in our waters and protection of public health and have mandated that our monitoring program continue unabated.

This decision has paid off in the long run. As I mentioned earlier, since 1988 - the Shore's low-point year - there has been steady improvement in the quality of our waters. In New Jersey, we use the nationally accepted criteria for fecal coliform. 99.4 percent of ocean monitoring stations and 96.7 percent of bay monitoring stations met the fecal coliform standard in 1992. This is an improvement over readings of 98.6 and 92.5 percent respectively for 1991. Furthermore, the United States Environmental Protection Agency has stated that enterococci may be a better indicator for analysing nearshore water quality. In 1991, 93.9 percent of the stations monitored for enterococci were within the surface water quality standard. In 1992, 100 percent met that standard.

Our monitoring program, combined with improvements attained in management of our wastewater and solid wastes in the coastal area, have resulted in waters in which our citizens can be confident. Such a program, as embodied in HR 31, is essential for all of the nation's waters.

And, it should be emphasized, the money that is spent by State, local and federal agencies on this type of program is an investment. As we have shown in New Jersey, the steady improvement in water quality and the confidence which the public can have in their ocean waters results in a high rate of return to the State.

We are highly supportive of the individual provisions of HR 31. There is great need for the additional study and research on human specific pathogens called for in the bill. While fecal coliform and enterococci are the prime indicators which are measured, neither is human specific. New Jersey has funded research to develop viral human specific indicators for pathogenicity in coastal waters. Likewise, the Interstate Shellfish Sanitation Commission has recently embarked on research into shellfish contamination which should provide additional insight in this area. We are pleased that the bill will require the USEPA to continue this research.

The one change which I would recommend to HR 31 is to refine the definition of "coastal recreation waters" to include estuarine as well as marine coastal waters. This will help to ensure the safety and health of those individuals who bathe in our bays as well as those who choose to recreate in our ocean waters.

In closing, I would like to commend this committee and Congressman Hughes for your efforts and perseverance in this area. New Jersey's success in coastal monitoring can and should be replicated throughout the nation. We have been the testing ground and now it is time for the setting of national criteria for testing and closure so that the public can have confidence in all of waters they swim in.

Natural Resources Defense Council

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TESTIMONY OF

THE NATURAL RESOURCES DEFENSE COUNCIL

before

THE SUBCOMMITTEE ON OCEANOGRAPHY,
GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

and

THE SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

on the

BEACHES ENVIRONMENTAL ASSESSMENT,
CLOSURE, AND HEALTH ACT OF 1993 (H.R. 31)

July 15, 1993

Prepared by:

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Thank you for this opportunity to testify on the Beaches Environmental Assessment, Closure, and Health Act of 1993 (H.R. 31). The Natural Resources Defense Council (NRDC) strongly supports this legislation which would mandate uniform standards, monitoring and public notification requirements for coastal recreational waters. NRDC believes this legislation is necessary to protect beachgoers nationwide and to provide them with a consistent and safe level of protection wherever they may swim.

NRDC has just released its third annual inventory of ocean and bay beach closings and advisories, *Testing the Waters III: Closing, Costs, and Cleanup at U.S. Beaches*, which documents that there were over 2600 closings and advisories at ocean and bay beaches in 1992. (A copy of this report has been provided to the Subcommittee and a Summary of Findings from this report has been made available to all Subcommittee members.) The number of closings is evidence that coastal pollution continues to be a serious problem in many parts of this country. It also documents the fact that 8 of the 22 coastal states surveyed do no monitoring of coastal recreational waters for swimmer safety (despite evidence of coastal pollution problems in those states and despite the sizeable revenues generated by coastal tourism); 5 coastal states have limited monitoring programs which apply to only a portion of their coastlines or involve infrequent (once a year) monitoring; and only 9 states regularly monitor all or a significant portion of their coastline.

Not only do monitoring practices differ throughout the country; bacterial standards for recreational waters--standards that supposedly protect public health--are inconsistent among and within states. States use different indicator organisms to determine the

presence of disease-causing pathogens and different concentrations of these indicator organisms to determine whether or not swimming should be permitted. This means that you can be swimming in waters in one state that are just as polluted as the waters at a beach in another state, but the beach in one state is closed and the other is not. Thus there is no consistent level of protection afforded beachgoers throughout the country.

In 1986 EPA recommended that state health officials adopt a standard of 35 enterococcus per 100 ml of water. However, only a handful of states use enterococcus as the indicator organism, despite a 1979 study showing that it has the best correlation with human illness among 11 indicator organisms studied. Many states instead use fecal coliform as the indicator organism; and several permit the use of total coliform, despite EPA's and the National Technical Advisory Committee's dismissal of this indicator as inaccurate. Even EPA's recommended standard is not all that protective of public health: waters polluted to a level just meeting the standard would result in 19 out of a 10000 swimmers at that beach getting sick with gastroenteritis.

Even when monitoring shows that the state public health standard is violated, many states do not require that the beach be closed or the public be notified. New Jersey is the only state that by law requires beaches to be closed to swimming when the state's health standard is violated. In other states, such closings are discretionary.

Because of the variability in standards, monitoring and closure practices among states, beachgoers are not afforded a consistent level of protection. These inconsistencies also

make it difficult to compare states based solely on the number of beach closings or advisories. While states with a lot of closings clearly have coastal pollution problems, those problems may be no worse than those of states which have no beach water monitoring. Until there are uniform standards, monitoring and closure practices, a beachgoer cannot be sure s/he is being adequately protected when swimming at beaches in different parts of the country.

Swimmers at marine beaches can contract illnesses from several disease-causing microorganisms (pathogens) that may be found in polluted waters. Gastroenteritis is the most common swimming-associated illness and can have a variety of symptoms: vomiting, diarrhea, stomachache, nausea, headache, and fever. Eye, ear and respiratory infections are also associated with swimming in sewage-contaminated waters. While swimming in sewage-polluted water does not usually result in severe or life-threatening illness, swimming-associated illnesses can take a substantial toll in terms of the convenience, comfort and well-being of the affected individuals, and also can result in economic losses to society in terms of lost work/sick days. Moreover, some cases of gastroenteritis can be serious--diarrheal disease can be of particular concern for infants, small children, and the elderly. People should be able to go to the beach and enjoy swimming in our oceans and bays without worrying about getting sick.

NRDC's report found that there were over 160 million visitors to ocean and bay beaches in 1992. These beachgoers deserve to swim in clean water and to know that they are being protected by effective public health standards, monitoring and notification

programs. Billions of dollars are generated each year from coastal tourism. (See attached table). Investing in clean water protects the communities and economies which depend on coastal tourism for revenues and jobs. Moreover, only a small portion of these revenues would be needed to create an effective beach protection program in each state.

NRDC's report examined the costs of monitoring and public notification programs and found that the costs are reasonable, indeed modest, given the economic and recreational interests at stake. The following are costs of several reasonably comprehensive state and county programs:

* Orange, Los Angeles, and Santa Cruz counties in California spent a total of $440,000 to monitor 164 miles, at an average cost of $2,683 per mile.

* Nine municipalities along Connecticut's coastline spent a total of $37,600 to monitor 27.4 miles of beaches, at an average cost of $1,372 per mile.

* The state of Delaware spent a total of $35,000 to monitor 32 miles of beaches, at an average cost of $1,094 per mile.

* The state of New Jersey spent a total of $200,000 to monitor all 127 miles of ocean and bay coastline, at an average cost of $1,575 per mile.

* Westchester, Suffolk, and Nassau counties in New York spent a total of $300,000 to monitor 40 miles of beaches, at an average cost of $7,500 per mile.

* The National Park Service spent a total of $20,000 to monitor 37 miles of Assateague Island National Seashore (AINS), at an average cost of $541 per mile.

* The City of St. Petersburg, Florida spent a total of $7,460 to monitor 3 miles of beaches, at an average cost of $2,487 per mile.

NRDC's report recommends strengthening of the Clean Water Act to address key sources of beach water contamination, such as polluted stormwater runoff and combined

sewer overflows. Preventing the pollution in the first place is the most important goal. Our report also strongly recommends the creation of a National Beach Protection Program which would provide a strong foundation for coastal water quality monitoring and public health protection at our Nation's beaches. Such a program would establish uniform beach protection standards, monitoring and public notification requirements, assuring the public a consistent level of protection.

These goals would be substantially furthered by passage of the Beaches Environmental Assessment, Closure, and Health Act of 1993 (H.R. 31). The legislation requires the establishment of water quality standards based on the most accurate available indicator. It also requires uniform monitoring methods, with monitoring frequency based on the extent of recreational use of waters and their proximity to pollution sources. A public right-to-know provision for posting and notification procedures for beaches with water quality violations is included. The legislation also calls for research to be conducted to identify more appropriate indicators for rapid and accurate detection of the presence of pathogens in beach water.

NRDC urges the Committee to take prompt action on this important legislation. Thank you for this opportunity to testify and I would be happy to answer any questions you may have.

INCOME GENERATED FROM COASTAL TOURISM FOR SELECTED STATES

Alabama	$ 954 million
California	$ 17.6 billion
Florida	$ 12 billion
Georgia	$ 1.3 billion
Hawaii	$ 9.9 billion
Mississippi	$ 530 million
New Jersey	$ 9.5 billion
North Carolina	$ 967 million
Texas	$ 1.4 billion

SOURCES: *AL – Alabama Bureau of Tourism and Travel; CA – Office of Trade and Commerce; FL – Florida Department of Natural Resources; GA – Department of Industry, Trade and Tourism; HI – Hawaii Visitor Bureau, MS – Mississippi Tourism Development, Mississppi Department of Economic and Community Development; NJ – New Jersey Division of Travel and Tourism; NC – North Carolina Department of Commerce, North Carolina Travel and Tourism; TX – Texas Department of Commerce-Tourism Division*

Center for Marine Conservation

Testimony of the

Center for Marine Conservation

Before the

Subcommittee on Oceanography, Gulf of Mexico, and Outer Continental Shelf

and the

Subcommittee on Environment and Natural Resources

of the

House Merchant Marine and Fisheries Committee

on the

Beaches Environmental Assessment, Closure and Health Act of 1993 (H.R. 31)

Betsy Schrader
Marine Debris Program Director
Tim Eichenberg
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Center for Marine Conservation

July 15, 1993

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Good afternoon Mr. Chairman and Members of the Subcommittees. My name is Betsy Schrader. I am the Marine Debris Program Director of the Pollution Prevention Program for the Center for Marine Conservation (CMC), an organization of 110,000 members committed to the conservation of living marine resources and their habitats. We appreciate your invitation to testify today regarding H.R. 31, the Beaches Environmental Assessment, Closure, and Health (B.E.A.C.H.) Act of 1993.

In its letter of invitation, the Subcommittees requested witnesses to provide their perspectives on the legislation, the benefits of national water quality criteria and monitoring requirements for coastal recreational waters, and studies or surveys relevant to the hearing. In response, our testimony today will address these concerns by providing information relevant to the legislation and hearing in four primary areas:

1) data collected on beach debris complied in the National Marine Debris Data Base;
2) the relationship of floatable debris to the safety and public health of recreational waters;
3) sources of floatables; and
4) elements of the B.E.A.C.H. Act that seek to address the problem of floatables.

The Center for Marine Conservation supports the enactment of H.R. 31. We support the issuance of federal water quality criteria to protect public health and safety in coastal recreational waters; the development of uniform monitoring methods and guidelines for assessing water quality; the setting

of state standards to meet or exceed these federal criteria and the notification of local governments and the public when these standards are not met; and the provisions for federal assistance for state programs to reduce floatables in coastal waters and for sharing the costs of developing state standards and monitoring.

Cleaning America's Beaches: The National Marine Debris Data Base

Since 1988, the Center for Marine Conservation has been coordinating an annual International Coastal Cleanup, supported by funding assistance from the Department of Commerce and the U.S. Environmental Protection Agency. Last Fall, more than 132,000 volunteers all over the United States spent a day at the beach picking up trash. The 1992 International Coastal Cleanup drew citizens from thirty coastal states, including the Great Lakes states, three U.S. territories, and thirty-one foreign countries. In the U.S. alone, nearly 2.8 million pounds of trash were gathered from 4,600 miles of beach during this three hour event.[1]

But the International Coastal Cleanup is not just a one-time event for the sole purpose of removing trash. Since 1988, the Center for Marine Conservation has been coordinating the collection of information on the composition of the trash gathered by the volunteers and reporting the results of this effort to Congress. This activity has enabled us to better understand the sources and pathways of marine debris and propose workable solutions to eventually eliminate it. Although information compiled by volunteers is not scientifically sampled,

in many cases the National Marine Debris Database corresponds to more rigorous scientific surveys and has proven remarkably consistent and informative. Results of the data collected from the 1992 cleanup will be released in a press conference in August but preliminary information indicates that the types and quantities of debris found on U.S. beaches has not changed significantly over the past few years.

In 1991, among the 5,200,741 debris items categorized on data cards and entered into the Database, several are especially indicative of inadequate sewage treatment and disposal practices that have direct bearing on the safety of recreational beaches. Although condoms and plastic tampon applicators -- traceable to inadequately treated sewage -- only accounted for 1% of all trash items collected, the following states had unusually high rates of sewage associated wastes: New Jersey, Massachusetts, Pennsylvania, Rhode Island, and New York. Sewage associated wastes found during the cleanup were most prevalent in areas with coastal combined sewer systems (namely, the mid-Atlantic and Great Lakes) lending support to the argument that much of the sewage associated wastes found on our beaches results from discharges of combined sewer overflows (CSOs).[2]

Syringes, hospital ID bracelets and blood transfusion bottles washed up on our nations beaches are indicators of improperly disposed medical wastes. Many of the syringes are also flushed down toilets or discarded and make their way to beaches through storm drains and inadequate sewage treatment systems. In 1991,

volunteers reported finding 8,280 plastic syringes on U.S. beaches in just three hours. The highest percentage of syringes were reported from Puerto Rico where 1,042 were found on 77 miles of beach. The number of syringes reported from the three states of particular interest to this committee were 2,111 on 438 miles of California beaches, 1,105 on 169 miles of Texas beaches and, 160 on 26 miles of New Jersey beaches.[3]

There is a positive correlation between a high percentage of sewage-associated wastes and relatively high percentages of medical wastes, supporting the assumption that some medical wastes enter the marine environment though sewer and storm drain systems. To address the sewer and storm drain problem, the Center for Marine Conservation is conducting a "Million Points of Blight" campaign. The goal of this campaign is to stencil one million storm drains in the United States with a message to educate the general public about the connections between storm drains and our nation's waterways. To date more than eighty state and local government agencies and community organizations are part of the Center's "Million Points of Blight" network and have stencilled over 94,800 storm drains.

Floatable Debris and Recreational Water Safety and Public Health

Debris on our beaches is more than an eyesore. Much of this debris, particularly plastic materials, is known to endanger birds, fish, and marine mammals. Plastic debris can harm or kill wildlife when it is either ingested or when animals become entangled in it. The threats plastics pose to marine life were

among the reasons for U.S. ratification of MARPOL Annex V, an international agreement banning plastic dumping from ships, and enactment of the Marine Plastic Pollution and Control Act of 1987, Public Law 100-220, implementing MARPOL Annex V in the U.S. Plastic debris also creates problems for mariners when their vessel propellers become entangled in discarded nets or line or cooling water intakes become clogged with plastic bags or sheeting. The threats plastics pose to recreation in and on the water, however, were only fully realized after land-based sources of debris -- particularly medical wastes -- washed up in massive numbers on Northeast beaches during the summers of 1987 and 1988.

According to studies following these events, the wash-ups caused an estimated loss of over $1 billion to New Jersey in 1987 and 1988 because of decreased tourism.[4] In 1988, attendance at two of Long Island's most popular beaches, Jones Beach and Robert Moses State Park, was down 50% costing the state parks system lost revenue. As you will hear in other testimony, a Natural Resources Defense Council survey of fifteen coastal states indicated that at least 2,600 beaches were posted with warnings or closed because of microbiological contamination in 1992.[5]

Although medical wastes and sewage related wastes have yet to be precisely identified with direct harm to humans, the presence of these wastes on beaches are potential indicators of other pollutants not readily apparent. Tampon applicators, condoms and syringes are evidence that sewage treatment systems have been bypassed. What this says about the levels of fecal coliform and

other pathogens in recreational waters is enough to raise significant public concerns -- as it should.

Studies have shown that swimming in contaminated marine waters poses a significant risk for contracting some infectious diseases.[6] According to the Centers for Disease Control, untreated human waste is the major cause of outbreaks of cholera and gastroenteritis, viral hepatitis, and amoebic dysentery because they can all be transmitted in water by bacteria, viruses and protozoans, respectively.[7]

In addition to the risks posed by direct contact with sewage-related pathogens, our health is endangered by eating nearshore contaminated seafood. The risk of human exposure to pathogens through consumption of tainted seafood is increasing.[8] As of January 1990, of the 17.2 million acres of estuarine waters in the United States used for harvesting shellfish fully 37% were either closed or restricted due to contaminants.[9] In Massachusetts 55%, in Texas 44%, and in California 98% of the shellfish waters are closed or restricted due to water quality degradation caused by inadequate septic systems, sewage discharges, and urban and agricultural runoff.[10]

Sources of Floatable Debris

Initially, illegal disposal activities were thought to be the cause of the medical waste incidents. Subsequent inventories of debris items, however, and reports from states where these incidents occurred, led the EPA to conclude that the probable routes by which medical waste was reaching marine and coastal

areas were principally via sewage system discharges, combined sewer overflows (CSOs), storm drains, and improper waste management practices.[11]

Many older communities employ "combined sewers" that commingle wastewater and stormwater and feed it to a regulator, which directs the combined flow to the treatment plant. In wet weather the combined sewer flow receives high volumes of stormwater which exceed the capabilities of the sewage treatment plant. Under these conditions, the regulator allows the discharge of the combined flows --- with raw sewage and runoff containing oil, grease, lead, chromium, pesticides and other suspended solids -- directly into estuaries and coastal waters.

CSOs and stormwater discharges pollute receiving waters, restrict our uses of the water, pose health risks, degrade the aesthetics of our waterways and coastlines, endanger fish and wildlife, and cause our cities and states to suffer economically. CMC's report on CSOs, entitled "America's Pipe Dream," noted that approximately 43 million people in the U.S. are serviced from 1,200 combined-sewer systems. These CSOs empty into 15,000-20,000 discharge points, which impair about 36% of our nation's coast line.[12]

Adverse effects from CSOs and stormwater discharges include potentially dangerous pathogens and fecal bacteria from human and animal wastes that can force closures of beaches and shellfish beds. Sewage also contains nutrients, organic-rich matter, and suspended solids, which can enrich nutrient concentrations and

stimulate excessive growth of algae, creating algae blooms. The natural decay of algae and other organic-rich materials from sewage can deplete the dissolved oxygen in the water, creating an environment detrimental to most forms of aquatic life. Suspended solids can also interfere with fish respiration. Industrial wastewater discharged from CSOs also introduces ammonia and toxic chemicals that can persist in aquatic sediments and bioaccumulate through the food chain through contaminated fish and wildlife.

Any effort to focus attention on recreational beach safety, particularly attempts to reduce floatables and the related sewage wastes they represent, must necessarily look at the problem of CSO's. We urge the Committee to link its efforts on beach safety with initiatives being undertaken now as the Congress reauthorizes the Clean Water Act.

Provisions in H.R. 31 to Reduce Floatable Debris

The Center for Marine Conservation supports H.R. 31 provisions for beach testing, monitoring and public notice to help protect public safety. By increasing public awareness of the quality of coastal recreation waters, it is possible that citizen action, including proper disposal practices, could help improve the environmental quality of those waters.

We support Section 3 of the bill, which calls for the issuance of federal water quality criteria for pathogens in coastal recreation waters to protect public health and safety, including specific numeric criteria to reflect risks from short term increases such as stormwater discharges. State standards

consistent with the federal criteria must be adopted within three years, ensuring that all states have at least minimum standards protecting coastal recreational waters.

Section 4 calls for the development of uniform methods and guidance for monitoring and assessing coastal recreation waters by the states that specify the frequency of monitoring, methods for detecting short-term pathogens, and special procedures for floatable materials, including when such materials constitute public health threats. Several states currently use the presence of certain sewage-related debris items as indicators of sewage treatment malfunctions or overloads. In our view, a monitoring program should concentrate on these items since they are more likely to be indicative of the presence of pollutants that could be harmful to human health. Further, we urge that where beach monitoring is delegated to local governments under Section 4(d), it be conditioned on the existence of an adequate local beach monitoring program.

We wholeheartedly support the notification provisions of Section 4(b). The notification of local governments and the general public, through the posting of signs, will increase public awareness of violations of water quality standards and potential health risks, and encourage proper disposal practices.

We are very pleased to note that the bill assists state and local governments in implementing beach monitoring, assessment and clean-up activities. Section 6 provides for technical assistance to local governments through state coastal management

programs. The yearly Coastweeks program is, in most states, administered or sponsored by the respective coastal zone management agencies and has proven a successful vehicle for co-sponsorship of beach clean-ups. We support continued cooperation between public and private groups in sponsoring beach clean-ups and in furthering citizen education on the sources and effects of marine debris.

Section 6 also makes eligible for federal assistance under the Coastal Zone Management Act state programs to reduce floatable material in coastal recreation waters through managing land uses, encouraging public participation, sponsoring beach clean-ups, and purchasing clean-up equipment. Costs for developing water quality criteria and monitoring coastal waters would be shared equally between the federal government and the states under Section 7.

Conclusion

In conclusion, we believe that the B.E.A.C.H. Act makes an outstanding contribution to reducing the beach debris problem by encouraging citizens, businesses and local governments to become part of the beach debris solution. We are concerned, however, that adequate public support be provided to state and local governments to help them implement the testing and monitoring provisions of the bill. We thank you for the opportunity to testify and look forward to working with the Subcommittee as you continue your deliberations on H.R. 31.

ENDNOTES

1. Center for Marine Conservation, *1991 International Coastal Cleanup Results*, (1992).

2. Ibid.

3. Ibid.

4. New York/New Jersey Harbor Estuary Program, *Newsletter*, Vol. 1, No. 2, Summer 1990.

5. McLain and Chasis, *Testing the Waters III: Closings, Costs, and Cleanup at U.S. Beaches*, Natural Resources Defense Council (1993).

6. Cabelli, *Health Effects Criteria for Marine Recreational Waters*, Publication EPA-600/1-80-031 (1983).

7. Levine, Stephenson and Craun, *Waterborne Disease Outbreaks, 1986-1988*, CDC Surveillance Summaries, Vol. 39, March 1990.

8. Office of Technology Assessment, *Wastes in the Marine Environment* (1987).

9. Office of Oceanography and Marine Assessment, *The 1990 National Shellfish Register of Classified Estaurine Waters*, National Oceanic and Atmospheric Administration (1991).

10. Ibid.

11. ICF Incorporated, *Inventory of Medical Waste Beach Wash-ups, June - October 1988*, Prepared for the Office of Policy, Planning and Evaluation, U.S. Environmental Protection Agency (1989).

12. U.S. EPA, *Draft National Water Quality Inventory: 1990 Report to Congress* (1991).

I

103D CONGRESS
1ST SESSION

H. R. 31

To amend the Federal Water Pollution Control Act and the Coastal Zone Management Act of 1972 to improve the quality of coastal recreation waters, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 5, 1993

Mr. HUGHES (for himself, Mr. SAXTON, Mr. GALLO, Mr. PAYNE of New Jersey, Mr. PALLONE, Mrs. ROUKEMA, and Mr. HOCHBRUECKNER) introduced the following bill; which was referred jointly to the Committees on Public Works and Transportation and Merchant Marine and Fisheries

---

A BILL

To amend the Federal Water Pollution Control Act and the Coastal Zone Management Act of 1972 to improve the quality of coastal recreation waters, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Beaches Environmental Assessment, Closure, and Health Act of 1993".

SEC. 2. FINDINGS AND PURPOSES.

(a) FINDINGS.—The Congress finds that—

73-065 O - 93 - 4

(1) the Nation's beaches are a valuable public resource used for recreation by millions of people annually;

(2) the beaches of coastal States are hosts to many out-of-State and international visitors;

(3) tourism in the coastal zone generates billions of dollars annually;

(4) increased population has contributed to the decline in the environmental quality of coastal waters;

(5) pollution in coastal waters is not restricted by State and other political boundaries;

(6) each coastal State has its own method of testing the quality of its coastal recreation waters, providing varying degrees of protection to the public; and

(7) the adoption of standards by coastal States for monitoring the quality of coastal recreation waters, and the posting of signs at beaches notifying the public during periods when the standards are exceeded, would enhance public health and safety.

(b) PURPOSE.—The purpose of this Act is to require uniform procedures for beach testing and monitoring to protect public safety and improve the environmental quality of coastal recreation waters.

SEC. 3. WATER QUALITY CRITERIA AND STANDARDS.

(a) ISSUANCE OF CRITERIA.—Section 304(a) of the Federal Water Pollution Control Act (33 U.S.C. 1314(a)) is amended by adding at the end the following:

"(9) COASTAL RECREATION WATERS.—(A) The Administrator, after consultation with appropriate Federal and State agencies and other interested persons, shall issue within 18 months after the effective date of this paragraph (and review and revise from time to time thereafter) water quality criteria for pathogens in coastal recreation waters. Such criteria shall—

"(i) be based on the best available scientific information;

"(ii) be sufficient to protect public health and safety in case of any reasonably anticipated exposure to pollutants as a result of swimming, bathing, or other body contact activities; and

"(iii) include specific numeric criteria calculated to reflect public health risks from short-term increases in pathogens in coastal recreation waters resulting from rainfall, malfunctions of wastewater treatment works, and other causes.

"(B) For purposes of this paragraph, the term 'coastal recreation waters' means Great Lakes and

marine coastal waters commonly used by the public for swimming, bathing, or other similar primary contact purposes.".

(b) STANDARDS.—

(1) ADOPTION BY STATES.—A State shall adopt water quality standards for coastal recreation waters which, at a minimum, are consistent with the criteria published by the Administrator under section 304(a)(9) of the Federal Water Pollution Control Act (33 U.S.C. 1314(a)(9)), as amended by this Act, not later than 3 years following the date of such publication. Such water quality standards shall be developed in accordance with the requirements of section 303(c) of the Federal Water Pollution Control Act (33 U.S.C. 1313(c)). A State shall incorporate such standards into all appropriate programs into which such State would incorporate water quality standards adopted under section 303(c) of the Federal Water Pollution Control Act (33 U.S.C. 1313(c)).

(2) FAILURE OF STATES TO ADOPT.—If a State has not complied with paragraph (1) by the last day of the 3-year period beginning on the date of publication of criteria under section 304(a)(9) of the Federal Water Pollution Control Act (33 U.S.C.

1314(a)(9)), as amended by this Act, the Administrator shall promulgate water quality standards for coastal recreation waters for the State under applicable provisions of section 303 of the Federal Water Pollution Control Act (33 U.S.C. 1313). The water quality standards for coastal recreation waters shall be consistent with the criteria published by the Administrator under section 304(a)(9) of the Federal Water Pollution Control Act (33 U.S.C. 1314(a)(9)), as amended by this Act. The State shall use the standards issued by the Administrator in implementing all programs for which water quality standards for coastal recreation waters are used.

SEC. 4. COASTAL BEACH WATER QUALITY MONITORING.

Title IV of the Federal Water Pollution Control Act (33 U.S.C. 1341–1345) is amended by adding at the end thereof the following new section:

"SEC. 406. COASTAL BEACH WATER QUALITY MONITORING.

"(a) MONITORING.—Not later than 9 months after the date on which the Administrator publishes revised water quality criteria for coastal recreation waters under section 304(a)(9), the Administrator shall publish regulations specifying methods to be used by States to monitor coastal recreation waters, during periods of use by the public, for compliance with applicable water quality stand-

ards for those waters and protection of the public safety. Monitoring requirements established pursuant to this subsection shall, at a minimum—

"(1) specify the frequency of monitoring based on the periods of recreational use of such waters;

"(2) specify the frequency of monitoring based on the extent and degree of use during such periods;

"(3) specify the frequency of monitoring based on the proximity of coastal recreation waters to pollution sources;

"(4) specify methods for detecting short-term increases in pathogens in coastal recreation waters; and

"(5) specify the conditions and procedures under which discrete areas of coastal recreation waters may be exempted by the Administrator from the monitoring requirements of this subsection, if the Administrator determines that an exemption will not impair—

"(A) compliance with the applicable water quality standards for those waters; and

"(B) protection of the public safety.

"(b) NOTIFICATION REQUIREMENTS.—Regulations published pursuant to subsection (a) shall require States to notify local governments and the public of violations

of applicable water quality standards for State coastal recreation waters. Notification pursuant to this subsection shall include, at a minimum—

"(1) prompt communication of the occurrence, nature, and extent of such a violation, to a designated official of a local government having jurisdiction over land adjoining the coastal recreation waters for which a violation is identified; and

"(2) posting of signs, for the period during which the violation continues, sufficient to give notice to the public of a violation of an applicable water quality standard for such waters and the potential risks associated with body contact recreation in such waters.

"(c) FLOATABLE MATERIALS MONITORING PROCEDURES.—The Administrator shall—

"(1) issue guidance on uniform assessment and monitoring procedures for floatable materials in coastal recreation waters; and

"(2) specify the conditions under which the presence of floatable material shall constitute a threat to public health and safety.

"(d) DELEGATION OF RESPONSIBILITY.—A State may delegate responsibility for monitoring and posting of

coastal recreation waters pursuant to this section to local government authorities.

"(e) REVIEW AND REVISION OF REGULATIONS.—The Administrator shall review and revise regulations published pursuant to this section periodically.

"(f) DEFINITIONS.—For the purposes of this section—

"(1) the term 'coastal recreation waters' means Great Lakes and marine coastal waters commonly used by the public for swimming, bathing, or other similar body contact purposes; and

"(2) the term 'floatable materials' means any matter that may float or remain suspended in the water column and includes plastic, aluminum cans, wood, bottles, and paper products.".

SEC. 5. STUDY TO IDENTIFY INDICATORS OF HUMAN-SPECIFIC PATHOGENS IN COASTAL RECREATION WATERS.

(a) STUDY.—The Administrator, in cooperation with the Under Secretary of Commerce for Oceans and Atmosphere, shall conduct an ongoing study to provide additional information to the current base of knowledge for use for developing better indicators for directly detecting in coastal recreation waters the presence of bacteria and viruses which are harmful to human health.

(b) REPORT.—Not later than 4 years after the date of the enactment of this Act, and periodically thereafter, the Administrator shall submit to the Congress a report describing the findings of the study under this section, including—

(1) recommendations concerning the need for additional numerical limits or conditions and other actions needed to improve the quality of coastal recreation waters;

(2) a description of the amounts and types of floatable materials in coastal waters and on coastal beaches and of recent trends in the amounts and types of such floatable materials; and

(3) an evaluation of State efforts to implement this Act, including the amendments made by this Act.

SEC. 6. PARTICIPATION OF STATE COASTAL ZONE MANAGEMENT PROGRAMS.

(a) TECHNICAL ASSISTANCE.—Each coastal zone management agency of a State with an approved coastal zone management program under section 306 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455) shall provide technical assistance to local governments within the State for ensuring that coastal recreation wa-

ters and beaches are as free as possible from floatable materials.

(b) CLEAN-UP OF COASTAL RECREATION WATERS AND BEACHES.—Section 306A of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455a) is amended—

(1) by adding at the end of subsection (b) the following:

"(4) Reduction of floatable materials in the State's coastal recreation waters by—

"(A) managing adjacent land uses so that floatable materials are not introduced into those waters;

"(B) encouraging public participation in reducing the amount of floatable materials that enter coastal recreation waters; and

"(C) sponsoring clean-up events at public beaches.";

(2) in subsection (c)(2)—

(A) by striking "and" at the end of subparagraph (D);

(B) by striking the period at the end of subparagraph (E) and inserting "; and"; and

(C) by inserting after subparagraph (E) the following:

"(F) the acquisition of beach and coastal recreation water clean-up equipment."; and

(3) by adding at the end the following:

"(g) DEFINITIONS.—For the purposes of this section—

"(1) the term 'coastal recreation waters' means Great Lakes and marine coastal waters commonly used by the public for swimming, bathing, or other similar body contact purposes; and

"(2) the term 'floatable materials' means any matter that may float or remain suspended in the water column and includes plastic, aluminum cans, wood, bottles, and paper products.".

SEC. 7. GRANTS TO STATES.

(a) GRANTS.—The Administrator may make grants to States for use in fulfilling requirements established pursuant to section 3 and 4.

(b) COST SHARING.—The total amount of grants to a State under this section for a fiscal year shall not exceed 50 percent of the cost to the State of implementing requirements established pursuant to section 3 and 4.

SEC. 8. DEFINITIONS.

In this Act—

(1) the term "Administrator" means the Administrator of the Environmental Protection Agency;

(2) the term "coastal recreation waters" means Great Lakes and marine coastal waters commonly used by the public for swimming, bathing, or other similar body contact purposes; and

(3) the term "floatable materials" means any matter that may float or remain suspended in the water column and includes plastic, aluminum cans, wood, bottles, and paper products.

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the Administrator—

(1) for use in making grants to States under section 7 not more than $3,000,000 for each of the fiscal years 1994 and 1995; and

(2) for carrying out the other provisions of this Act not more than $1,000,000 for each of the fiscal years 1994 and 1995.

O

TESTIMONY BY
JIM FLORIO
GOVERNOR OF THE STATE OF NEW JERSEY

IN SUPPORT OF H.R. 31,
THE BEACHES ENVIRONMENTAL ASSESSMENT,
CLOSURE, AND HEALTH ACT OF 1993

BEFORE THE HOUSE SUBCOMMITTEES ON
OCEANOGRAPHY, GULF OF MEXICO, AND
OUTER CONTINENTAL SHELF
AND
ENVIRONMENT AND NATURAL RESOURCES

JULY 15, 1993

I want to thank the Committee for giving me the opportunity to express my strong support for H.R. 31, the Beaches Environmental Assessment, Closure, and Health Act of 1993. I would also like to commend Congressman Hughes for his leadership in the effort to enact this important legislation to safeguard our nation's beaches and coastal waters.

H.R. 31 protects public health and the environment by establishing uniform, national standards for testing coastal waters for bacteria contamination and by requiring the posting of notices at beaches where bacteria concentrations exceed safe levels. This legislation is sorely needed and long overdue.

In New Jersey, we recognized the importance of having uniform standards for ocean water quality back in 1985. That year, our State implemented the Cooperative Coastal Monitoring Program to ensure that all coastal communities in New Jersey used the same standards and procedures for assessing ocean water quality and for closing beaches when the standards are not met.

Today, New Jersey's program for monitoring coastal waters for bacteria contamination is the toughest in the nation. We require weekly sampling and testing at hundreds of locations along our 127-mile coastline. If bacteria levels are found to exceed State standards, the beach is closed and it stays closed until the water quality returns to safe levels. In this respect, New Jersey's program provides even greater protection for the public than H.R. 31, which does not mandate beach closures.

A recent study by the Natural Resources Defense Council confirms that no State does more than New Jersey to ensure that its beaches and coastal waters are clean and safe. Sadly, this same study also revealed that most other States do only limited monitoring of water quality and some do none at all.

Regular water quality testing is the only way to determine if the ocean contains harmful bacteria or viruses. Ocean bathers who take the plunge into untested waters face the risk of contracting a variety of illnesses, including hepatitis, gastroenteritis, skin and ear infections.

To further compound the problem, even among States that regularly monitor their coastal waters, there is no consensus as to when bacteria levels should be considered harmful. The same levels that would trigger a beach closure in one State will be considered safe for swimming in another.

H.R. 31 provides solutions to both of these problems. It greatly reduces the risk that bathers will be exposed to untested waters by requiring the U.S. Environmental Protection Agency (EPA) to issue regulations specifying how frequently States must monitor their coastal waters. And the bill addresses the current uncertainty over when bacteria levels may be considered safe by having the EPA establish numerical standards that apply nationwide.

The public has the right to know when it is safe and when it is not safe to go to the beach, whether that beach is located at Cape May or Cape Cod or Cape Hatteras. New Jersey provides this protection to its citizens and visitors, but most States are not doing enough to ensure the health and safety of their beaches. And the situation is not likely to improve unless Congress enacts legislation to establish minimum standards for monitoring coastal waters.

Currently, States with lax monitoring programs enjoy a public relations and financial advantage over New Jersey and other States with stringent monitoring programs. Less frequent monitoring and less stringent standards makes it less likely that bacteria levels sufficient to trigger a beach closure or health advisory will be detected. And, because the beaches in States with lax programs tend to be closed or posted less often, the public gets the mistaken impression that these States have cleaner beaches, which can translate into more tourist revenues.

New Jersey is trying to swim against this tide, but it hasn't always been easy to keep our heads above water. During the summers of 1987 and 1988, beach closures mandated by New Jersey's strict standards cost our State's economy an estimated $1 billion in lost tourist income.

Since then, New Jersey has managed to avoid a repeat of those disastrous summers by taking a number of actions to keep our beaches and coastal waters clean and safe. In the past few years, we have worked aggressively to upgrade our sewage treatment facilities. We have also ended the practice of disposing of sewage sludge by dumping it into the ocean. Our strict beach monitoring program has also helped to identify broken pipes and other sources of accidental sewage discharge, so we can act quickly to eliminate these sources. And, through our landmark pollution prevention law and clean water enforcement program, New Jersey is using a combination of incentives and penalties to reduce the discharge of pollutants into our coastal and inland waters.

Even though we have made significant progress in improving the quality of our coastal waters, the prospect that our strict beach closure standards will drive tourists to beaches in States with lesser standards remains a serious concern. Tourism is our State's second largest industry, with beaches and coastal recreation representing a major source of revenue and over 300,000 jobs. In fact, more than half of New Jersey's $18 billion tourist economy comes from four coastal counties which contain the prime beaches and recreational areas known as the Jersey Shore.

Competition for this lucrative market may account for the fact that only a few States have followed New Jersey's example and implemented stringent beach monitoring programs. In fact, recent data shows there was less monitoring conducted in 1992 than in prior years. If States and localities are not providing adequate protection for ocean bathers, then Congress needs to step in and establish uniform,

national beach monitoring standards.

Five years ago, when wash-ups of medical waste and other debris caused a rash of beach closings in New Jersey and other Atlantic Coast States, Congress demonstrated its ability to take action in response to this crisis. As a member of Congress at that time, I strongly supported Federal legislation to protect beaches and coastal waters through greater regulation of medical waste and by ending ocean dumping of sewage sludge. In spite of these efforts, floatable debris and sewage-associated wastes continue to pose a threat to coastal areas, particularly those in the mid-Atlantic and Northeast regions.

The problems we face today may be less visible but they are no less serious than what we confronted five summers ago. Instead of syringes washing ashore, microscopic bacteria and viruses now pose the greatest hazard to ocean bathers. And, even though we have ended the deliberate dumping of sewage into the ocean, sewage wastes still find their way into our coastal waters via periodic sewage overflows and bypasses.

When it comes to protecting the safety of our beaches and oceans, we cannot afford to stick our heads in the sand and ignore the hazards of bathing in bacteria-infested waters. The State of New Jersey stands ready to do its part, but we cannot go it alone. Because ocean pollution does not recognize State borders, we need the Congress and all the coastal States to work together in this effort.

H.R. 31 provides a framework to make this happen. By establishing minimum beach monitoring standards that apply nationwide, this legislation ensures that all States will regularly monitor their beaches for harmful levels of bacteria and viruses. At the same time, it provides States with flexibility to tailor their monitoring programs to local conditions, so long as the minimum Federal standards are met.

New Jersey has had uniform beach monitoring standards in place for nearly a decade, and we have found them to be both effective and affordable. In addition to the public health benefits our standards provide, we have recently begun to discover how a vigilant beach monitoring program and a healthy beach economy go hand-in-hand. As our monitoring has documented the steady improvement of our coastal waters in recent years, the public has gained confidence in the safety of our beaches and is returning to the Jersey Shore in increasing numbers. Based on New Jersey's experience, we can expect the adoption of national beach monitoring standards to provide a similar boost for tourism in beach communities nationwide.

For these reasons, I strongly urge the Committee and the entire Congress to support H.R. 31. The time has come to extend the protections New Jersey currently provides for ocean bathers to beaches throughout the United States.

Testing The Waters III

Closings, Costs, and Cleanup at U.S. Beaches

NRDC

Natural Resources Defense Council / June 1993

Summary of Findings For 1992

◆ Pollution continues to cause degradation of water quality throughout the nation, as evidenced by the persistence of beach closings. In 1992, U.S. ocean and bay beaches were closed, or advisories were issued against swimming, on more than 2,600 occasions in the coastal states that monitor beach water quality. There have been over 7,700 closings and advisories since 1988. *(See Table 1: Ocean & Bay Beach Closings & Advisories in 22 Coastal States, 1988-1992.)*

◆ High levels of bacteria—indicating the presence of pathogens in human or animal waste—are responsible for the overwhelming majority of beach closings and advisories. The major causes of high bacteria levels in beach water are: inadequate and overloaded sewage treatment plants, raw sewage discharges from combined or sanitary sewers, polluted stormwater runoff, faulty septic systems, and boating wastes.

◆ The wide range of diseases that can be carried by the bacteria in sewage-contaminated waters include gastroenteritis, dysentery, and hepatitis. The consequences of contracting swimming-associated illnesses can be greater for children, elderly people, and others with weaker immune systems.

◆ The federal Clean Water Act is currently before Congress for amendment and reauthorization. This provides a crucial opportunity to strengthen protections for ocean and bay beaches by promoting cleanup of the sources of beach pollution and by providing uniform national standards, monitoring, and public notification requirements to protect swimmers.

◆ There were over one-hundred sixty million visitors to ocean and bay beaches in the United States in 1992. Investing in clean water will protect these millions of visitors and the jobs of local businesspeople who rely on beach recreation, as well as fishing. As a consequence of clean water investment, new jobs will be created for every $1 billion invested in water and wastewater infrastructure, including cleanup of sources that pollute beach water, at least 6,400 to 15,600 jobs could be directly generated.

◆ There are still several coastal states that monitor ocean and bay beach water quality for swimmer safety only infrequently, if ever. Indeed, in some parts of the country there was less monitoring conducted in 1992 than in prior years due to budget cutbacks. However, the costs of monitoring beach water quality to protect swimmer safety are reasonable and are well worth the investment pending cleanup of pollution sources.

◆ Currently there are no uniform nationwide bacteria standards or testing procedures to protect swimmer safety. There are no federal requirements that the public be notified when water quality standards are violated. This lack of leadership at the national level leaves American beachgoers without the necessary information to protect themselves and their families from unnecessary health risks.

◆ Tourists spend billions of dollars annually visiting coastal counties and their ocean and bay beaches. A portion of the revenues generated by tourism should be allocated to ensure that bay and ocean swimming do not constitute health risks.

Table 1: Ocean & Bay Beach Closings & Advisories In 22 Coastal States, 1988–1992

STATE	1988	1989	1990	1991	1992*
Alabama	*No regular monitoring of ocean/bay beaches for swimmer safety*				
California	**	At least 64	At least 338	745 + 5 permanent + 1 extended	At least 609 + 1 permanent + 2 extended
Connecticut	**	At least 103	218	293 +1 extended	At least 223
Delaware	1	62	11	11	5
Florida	*Limited monitoring of ocean/bay beaches for swimmer safety (8/35 coastal counties)*				
	**	**	303	299	773 + 1 extended***
Georgia	*No regular monitoring of ocean/bay beaches for swimmer safety*				
Hawaii	At least 9	At least 23	At least 22	106	29
Louisiana	*No regular monitoring of ocean/bay beaches for swimmer safety (since 1988)*				
				1 permanent	1 permanent
Maine	**	1	30 + 1 extended	47 + 3 permanent	At least 3 permanent
Maryland	*Limited monitoring of ocean/bay beaches for swimmer safety*				
	0	0	0	24 + 3 permanent + 2 extended	At least 6 + 3 permanent + 2 extended
Massachusetts	At least 75	At least 60	At least 59	At least 59	At least 60
Mississippi	*No regular monitoring of ocean/bay beaches for swimmer safety (since 1989)*				
New Hampshire	*Infrequent monitoring (once annually) of ocean/bay beaches for swimmer safety*				
	**	**	**	1 extended	0
New Jersey	126	266	228	108	112
New York	273 + 1 permanent	473 + 5 permanent	383 + 3 permanent	314 + 3 permanent + 2 extended	799****
North Carolina	*No regular monitoring of ocean/bay beaches for swimmer safety*				
Oregon	*No regular monitoring of ocean/bay beaches for swimmer safety*				
Rhode Island	0	0	0	0	0
South Carolina	*No regular monitoring of ocean/bay beaches for swimmer safety*				*2*

continued

Texas	*Limited monitoring of ocean/bay beaches for swimmer safety (2 local programs)*				
	**	**	**	0	1 medical waste advisory
Virginia	*Limited monitoring of ocean/bay beaches for swimmer safety (2 local programs)*				
	**	**	**	2	0
Washington	*No regular monitoring of ocean/bay beaches for swimmer safety*				
TOTAL:	At least 484 + 3 permanent	At least 1052 + 5 permanent	At least 1592 + 4 permanent 1 extended	At least 2008 + 14 permanent 7 extended	At least 2619 + 8 permanent 6 extended

* Table summarizes 1992 information detailed in Chapter 5: State Summaries

** No data were gathered by NRDC for this year.

*** Dade County issued 506 warnings against swimming after heavy rains caused sewage spills.

**** Included in this total are 706 rainfall advisories issued in New York State.

Note:

A beach closing/advisory indicates a single beach for which a closing/advisory has been issued for a single day. "Permanent" closings were for at least the entire summer while extended closings were for more than 6 weeks.

Because of inconsistencies in monitoring and closure practices among states and over time, it is difficult to make comparisons among states based on the closure data.

The Annual Report for 1992

Cooperative Coastal Monitoring Program

New Jersey Department of Environmental Protection and Energy

The Annual Report for 1992

Cooperative Coastal Monitoring Program

STATE OF NEW JERSEY
Jim Florio, Governor

New Jersey Department of Environmental Protection and Energy
Scott A. Weiner, Commissioner

Enforcement
Diane K. Weeks, Assistant Commissioner

Enforcement Coordination
Marlen Dooley, Director

CONTENTS

I. EXECUTIVE SUMMARY

The Cooperative Coastal Monitoring Program ("CCMP") is a joint effort among the Department of Environmental Protection and Energy ("DEPE"), the Department of Health ("DOH") and 'ocal health agencies. Under the CCMP, the local health agencies conduct sampling of waters at ocean and bay beaches to evaluate coastal water quality; the local health agencies, the DEPE and the DOH work together to interpret the water quality data and use it to respond to public health concerns and to develop strategies for coastal zone management. DOH regulations governing public recreational bathing incorporate the CCMP. N.J.A.C. 8:26. The provisions of those regulations are enforceable by DOH and by local health departments.

This report outlines the test results from the 331 coastal monitoring stations for the 1992 season. As background for that data, the report also describes the CCMP in detail.

A brief summary of the highlights of the report follows:

A. The 1992 data show that New Jersey is successfully maintaining and protecting the uses of the waters at its beaches.

To determine that coastal waters are suitable for bathing, the CCMP compares concentrations of fecal coliform bacteria against surface water quality standards established in DEPE regulations. The surface water quality standards are part of an antidegradation policy to maintain and protect existing uses of New Jersey's surface waters, including recreational uses. During the summer of 1992, fecal coliform concentrations at 99.4 percent of the monitoring stations at ocean beaches and 96.7 percent of the stations at bay beaches met the standards. These figures represent an increase from 1991, in which 98.6 percent of the ocean stations and 92.5 percent of the bay stations met the standards.

The United States Environmental Protection Agency has stated that enterococci concentrations may be a better indicator than recal coliform in determining whether the uses of the coastal waters are being maintained and protected. In 1992, 100 percent of the stations monitored for enterococci concentrations were within the surface water quality standard; 93.9 percent of the stations met the standard in 1991.

B. The DEPE is continuing to focus its efforts upon the primary cause of beach closings.

Discharges of stormwater are a frequent cause of the elevated concentrations of bacteria that cause short-term, localized beach closings. Discharges from interconnected and cross-connected sanitary and stormwater infrastructure are especially likely to increase bacteria concentrations. Pursuant to the Sewage Infrastructure Improvement Act, the DEPE is working with coastal municipalities to identify and eliminate these interconnections and cross-connections. Over a three-

year period the municipalities are mapping their stormwater and sanitary sewer lines, identifying the interconnections and cross-connections, and monitoring outfalls that discharge to coastal waters. The next step will be to abate the interconnections and cross-connections. The DEPE has targeted $4.7 million for grants to plan and design the abatement of interconnections and cro s-connections.

DEPE is also providing technical guidance to the municipalities regarding management practices that can reduce bacteria concentrations in stormwater. These practices include cleaning of streets, catch basins and stormwater pipes. Such efforts will assist further in improving coastal water quality.

C. The CCMP has determined the cause of recurring water quality problems at particular beaches, enabling the DEPE to work with other agencies to address the problem.

The Ocean County Health Department closed the Sheridan Avenue Beach in Seaside Heights three times in 1992. This beach has regularly been subjected to elevated fecal coliform concentrations during the past three years. The CCMP determined that droppings from birds roosting under the Sheridan Avenue pier are responsible for this problem.

The DEPE believes the most immediately effective action would be to relocate the beach a short distance away from the pier. The DEPE will work with the DOH, the Ocean County Health Department and the Borough of Seaside Heights to implement this solution if they agree that it is feasible.

II. PROGRAM DESCRIPTION

A. Water Quality Monitoring

Under the CCMP, county and local health agencies conduct weekly sampling of coastal waters during the beach season, under agreements with the DEPE. The Atlantic, Cape May, Monmouth, Middlesex and Ocean County Health Departments and the local health agencies in Atlantic City, Long Beach Island, Long Branch, Matawan and Middletown have entered into these agreements.

In 1992 the health agencies collected water samples from 180 ocean and 151 bay monitoring stations for fecal coliform analyses. At 65 of these stations the agencies also analyzed samples for enterococci concentrations.

The health agencies select the locations for the monitoring stations in consultation with the DEPE and the DOH. Monitoring stations are located where they can best evaluate ambient water quality at recreational beaches, and where the

effects of pollution sources on ambient water quality can best be recorded. The stations are listed in Table A of the Appendix. The DEPE, the DOH and the health agencies review the locations of the stations annually, and add new stations or delete old stations to reflect changes in the location of recreational beaches and the discovery and remediation of pollution sources.

In 1992 all but two of the ocean stations were located at recreational bathing beaches. This report refers to those stations as recreational monitoring stations. Two stations were located at areas closed to recreational water activities that have recurring water quality problems. These two stations are referred to as environmental monitoring stations.

Not all recreational beaches have monitoring stations associated with them. When beaches are adjacent and the water flow is not obstructed, the beaches can share a monitoring station, because the water quality at the monitoring station will be representative of the water quality at the adjacent beaches.

For this reason, many recreational ocean beaches can share monitoring stations but recreational bay beaches cannot. Ocean beaches are contiguous; in the absence of potential pollution sources located between the beaches (for example, sewage treatment plant discharges, stormwater discharges, and tidal flows from inlets), the water quality at the beaches is similar. The same is not true of bay beaches. Bay beaches are more isolated than the ocean beaches because the shoreline is not continuous. Marshes, bulkheading, and nonsloping shores separate beaches in the bay. Therefore, water quality at one bay beach is not representative of the water quality at nearby beaches.

At the monitoring stations, the health agencies monitor water quality in accordance with the procedures specified in the Field Sampling Procedures Manual published by the DEPE in May 1992, and the New Jersey State Sanitary Code, Chapter IX, Public Recreational Bathing, N.J.A.C. 8:26. From May through September the samples collected at the monitoring stations are analyzed weekly. The laboratories of the Atlantic County Municipal Utilities Authority and the Monmouth, Cape May, and Ocean County Health Departments perform the analyses for the monitoring stations in those counties. Samples from Middlesex County monitoring stations are analyzed by State-certified private laboratories.

The samples are analyzed to determine the concentrations of fecal coliform and enterococci. As discussed in section B below, fecal coliform is the regulatory standard for analyzing nearshore water quality. Enterococci is an alternative to fecal coliform as a bacterial indicator of fecal pollution; the DEPE uses enterococci data to quantify the relationship between concentrations of that bacteria and fecal pollution, and to establish a database of ambient enterococci concentrations.

The water analyses for fecal coliform concentrations are performed using either the modified A1 most probable number (MPN) technique or the membrane filter

technique. Both techniques provide results in 24 hours. The water analyses for enterococci concentrations are performed using the membrane filter technique, which provides results in 48 hours.

The CCMP evaluates trends in coastal water quality to determine the general suitability of an area for recreational use. To make that determination, the CCMP compares ambient bacteria concentrations with the Surface Water Quality Standards, N.J.A.C. 7:9-4. The DEPE established the standards as part of an antidegradation policy to maintain and protect existing uses of New Jersey's surface waters, including recreational uses. The Surface Water Quality Standard for fecal coliform in coastal waters require that the geometric mean of the fecal coliform concentrations for ocean areas within 1500 feet of shore be no greater than 50 per 100 milliliters of sample. The concentrations for the bay areas may not exceed 200 per 100 milliliters of sample. The standards for enterococci require that the concentrations be no greater than 35 per 100 milliliters of sample.

The surface water quality standards for fecal coliform and enterococci are based on geometric means of a minimum of five samples taken over a specific period of time. For the CCMP evaluation of coastal water quality, this time period is May through September. The weekly sampling during this period provides for a minimum of 18 samples per station in the geometric mean calculation. Additional samples taken by health departments from monitoring stations during an unusual water quality problem are included in the calculation.

B. Water Quality Testing at Coastal Recreational Beaches

In addition to evaluating trends in coastal water quality to confirm that beaches remain generally suitable for bathing, the CCMP also evaluates water quality in order to determine that waters are safe for bathing at a particular time. To determine that the waters are safe for bathing, the CCMP compares ambient bacteria concentrations with the primary contact standards established by the DOH. Under the DOH regulations for bathing beaches, fecal coliform concentrations may not exceed 200 fecal coliform per 100 milliliters of sample. N.J.A.C. 8:26-7.19.

The DOH primary contact standard is based on single samples, in contrast to the surface water quality standards which are based upon a geometric mean of multiple samples. The primary contact standard is based upon single samples because episodic water quality problems may expose recreational bathers to infectious disease agents. Single samples assist in identifying those episodic problems, while a geometric mean of samples collected over time may show that no continuing problem is present. In addition, single samples provide data relatively quickly, enabling DOH to take action when episodic water quality problems occur; in contrast, a geometric mean by its nature is based upon multiple samples collected over time, making it difficult to take action immediately when a problem occurs.

Each week the health agencies take a sample and test it for fecal coliform. If the fecal coliform concentration of the first sample of the week at a recreational station does not exceed the primary contact standard, no further samples are required for the week. If the fecal coliform concentration exceeds the standard, a second confirmatory sample must be taken. If both the preliminary and the confirming sample from a recreational station exceed the primary contact standard, DOH regulations require the health agency to close the waters of the associated recreational beach to primary contact activities such as swimming and wading, N.J.A.C. 8:26-8.8.

For recreational beaches, the health agency also surveys the area visually and collects additional samples ("bracket samples") at either side of the station to determine the extent of the pollution and possible pollution sources. The results of the bracket samples determine the extent of the closing along the shore and the number of beaches closed.

In selecting the locations of the bracket samples for ocean beaches, the health agency considers the fecal coliform concentrations at the adjacent monitoring stations and the location of adjacent bathing beaches, suspected pollution sources, and structures such as groins and piers that interfere with the movement of the coastal waters. For example, if the adjacent monitoring stations show a fecal coliform concentration in excess of the standard, bracket samples would be collected from locations further away from the original station. If the concentrations at the adjacent stations did not exceed the standard, then the samples would be collected at a location between the original station and the adjacent stations. Bracket samples from bay recreational beaches are taken at the outer limits of the beach.

A beach located at a bracket sample area that exceeds the standard is included in the closing if the confirming sample at the adjacent station exceeds the standard. A single sample within the primary contact standard from a closed beach and an acceptable sanitary survey of the area is required for a reopening.

DOH regulations also provide the health agency with the discretion to close a recreational beach when certain environmental conditions exist. Examples of such conditions include the discharge of raw sewage through infrastructure failure or a discharge of petroleum products on or off shore. Further, the health agency may close a beach when a sanitary survey discovers any condition that may present "an imminent hazard to public health."

C. Inspections of Coastal Wastewater Treatment Facilities

Point source discharges from coastal wastewater treatment facilities can affect water quality at bathing beaches. Accordingly, the DEPE routinely monitors the treatment of effluent at these facilities, to ensure that they operate in accordance with the requirements of their permits.

During the beach seasons before 1992, the DEPE had inspected these facilities weekly as part of the CCMP, and also conducted weekend inspections. However, financial constraints made it necessary for the DEPE to reduce the frequency of its inspections to biweekly and suspend weekly inspections. As a result, the DEPE performed 324 inspections of coastal wastewater treatment facilities in 1992. That figure includes preseason and postseason inspections as well as the inspections performed during the beach season. Additionally, during the beach season the DEPE inspected 57 collection systems associated with the coastal wastewater treatment facilities and 43 stormwater collection systems in the coastal region. The DEPE also conducted a total of 77 special investigations into potential causes of elevated fecal coliform concentrations in the coastal waters, including unpermitted discharges, overflows, and stormwater impacts. In addition, 32 citizen complaints regarding degraded coastal water quality were investigated during the summer.

As of August 1988, all coastal wastewater facilities (listed below) had been upgraded and were discharging effluent that met at least secondary performance concentrations. Secondary treatment of sewage provides for removal of a minimum of 85 percent of total suspended solids and biological oxygen demand.

Monmouth County Bayshore Regional Outfall Authority
Northeast Monmouth Regional Sewerage Authority
Long Branch Sewerage Authority
Ocean Township
Asbury Park
Township of Neptune Sewerage Authority
South Monmouth Regional Sewerage Authority
Ocean County Utilities Authority Northern
Ocean County Utilities Authority Central
Ocean County Utilities Authority Southern
Atlantic County Utilities Authority
Cape May County Municipal Utilities Authority, Ocean City
Cape May County Municipal Utilities Authority, Seven Mile Middle
Cape May County Municipal Utilities Authority, Wildwood/Lower
Cape May County Municipal Utilities Authority, Cape May Point
Lower Township Municipal Utilities Authority

D. Coastal Surveillance

Aerial surveillance of nearshore coastal waters has been an essential part of the CCMP since 1988. The DEPE conducts surveillance flights six days each week during the beach season from mid-May through mid-September, providing information needed to assess the condition of coastal waters and to evaluate public reports of ocean pollution. The flights also assist the DEPE's efforts to identify problems and correct them before they affect the use of bathing waters. For example, during the flights the DEPE surveys the fourteen outfall pipes that discharge into the ocean, because problems in the operation of a sewage treatment plant or the rupture of a sewer line may become apparent from a survey of the outfall.

In 1992 the DEPE conducted 54 low-altitude flights (95.3 flight hours) along the shores of the Hudson-Raritan estuaries and along the Atlantic Ocean shoreline from Sandy Hook to Cape May. The flight schedule consists of four short flights per week covering Sandy Hook to Island Beach State Park, Raritan Bay, and the Lower Harbor north to Governors Island in New York. Two extended flights per week included the Atlantic Coast to Cape May Point. From July 1 to August 26, 1992, financial constraints reduced the schedule to three flights per week. The routine schedule resumed on August 26 and continued until the end of the season on September 11. Table C in the Appendix summarizes the flight logs of the surveillance flights.

From 1988 through 1992, the DEPE used a helicopter to conduct coastal surveillance flights. However, as a result of financial constraints DEPE will use a fixed-wing aircraft for these flights in 1993.

Another problem that threatens New Jersey's bathing beaches is the potential for floatable debris such as wood, trash and medical waste to wash up onto bathing beaches. Aerial surveillance of the coast enables the DEPE to locate floating debris and the sources of that debris. Once the DEPE has located the debris and its sources, the New York-New Jersey Harbor Estuary Program Floatables Action Plan and Operation Clean Shores can work to prevent the debris from washing up onto the beaches.

Through the New York-New Jersey Harbor Estuary Program Floatables Action Plan, the CCMP coordinates efforts with the United States Army Corps of Engineers to use nets to capture debris floating in the ocean. Operation Clean Shores, a joint effort of the DEPE, the New Jersey Department of Corrections, and coastal municipalities, removes floatable debris from areas where extreme high tides can return it to the ocean, which can then wash the debris onto bathing beaches. Through October, 1992, Operation Clean Shores removed 10.06 million pounds or 18,291 cubic yards of debris from 72.1 miles of shoreline, including the Sandy Hook Unit of Gateway National Recreation Area and areas of the Hackensack Meadowlands. In the four years since the program began, more than 35 million pounds of floatable debris has been removed. Operation Clean Shores has been expanded to include the Hudson-Raritan, Delaware and barrier island estuaries and will perform cleanups year-round.

Surveillance flights have shown that the quantity of floatable debris present in the harbor waterways has continued to decrease since 1990. No beaches were closed in 1991 or 1992 due to floatable debris. The DEPE believes that the CCMP, the Floatables Action Plan and Operation Clean Shores all contributed to this improvement.

III. RESULTS AND DISCUSSION

A. Fecal Coliform Concentrations

1 General

As noted in part II above, fecal coliform is the regulatory standard for analyzing nearshore water quality. The CCMP compares fecal coliform concentrations in coastal waters against the concentrations allowed under the Surface Water Quality Standards ("SWQS") at N.J.A.C. 7:9-4.14, and against the concentrations allowed under the primary contact standards ("PCS") at N.J.A.C. 8:26-7.19. For ocean stations, the SWQS is 50 fecal coliform per 100 milliliters of sample and the PCS is 200 fecal coliform per 100 milliliters of sample. For the bay stations, both the SWQS and the PCS are 200 fecal coliform per 100 milliliters of sample.

As noted in II(B) above, the PCS is based upon single samples. Single samples can reveal episodic water quality problems that may expose bathers to infectious disease agents. When a sample showing an exceedance of the PCS at a recreational beach is confirmed, the health agency with jurisdiction over that beach will close it. Therefore, the number and percentage of exceedances of the PCS is relevant in determining the frequency with which these water quality problems occur. In contrast, the SWQS is based upon a geometric mean of multiple samples.

2. Geometric means of fecal coliform concentrations

As discussed above, the SWQS for fecal coliform is based upon a geometric mean of multiple samples. The geometric mean is useful in evaluating trends in coastal water quality to confirm that a beach remains generally suitable for bathing.

Table 1 summarizes the total number of samples collected at the ocean and bay monitoring stations in the five participating counties during 1990, 1991, and 1992. The geometric means are based upon that number of samples.

Table 1

Ocean Monitoring Stations

	Atlantic			Cape May			Monmouth			Ocean		
	90	91	92	90	91	92	90	91	92	90	91	92
Total Samples	552	557	674	1174	1159	1171	632	711	710	998	1094	1079

Bay Monitoring Stations

	Atlantic			Cape May			Monmouth			Ocean			M'sex	
	90	91	92	90	91	92	90	91	92	90	91	92	91	92
Total Samples	232	281	276	1054	1023	1006	475	484	452	1101	1114	850	95	78

Graphs 1 through 4 show the geometric means of the fecal coliform concentration in samples collected at each monitoring station during each beach season from 1989 through 1992. The graphs show that the highest concentrations of fecal coliform generally are present in five areas: Long Branch, Seaside Heights, Atlantic City, Ocean City and the Wildwoods. As noted in Table 2 below, the geographic means from those areas were lower in 1992 than in 1991.

Table 2 shows the geometric means of the fecal coliform concentration for each of these areas during the periods shown in the graphs. A series of the three highest geometric means for each year from Atlantic City, Ocean City and the Wildwoods are shown, because these areas experienced elevated geometric means at several stations rather than at just a single station as in Long Branch and Seaside Heights.

Table 2

Year	Long Branch	Seaside Heights	Atlantic City	Ocean City	Wildwoods
1989	50.9	38.3	27.9, 29.2, 27.5	23.0, 19.5, 22.9	45.9, 38.2, 37.9
1990	29.7	103.4	40.4, 39.7, 38.4	14.7, 13.1, 18.0	30.3, 29.9, 21.3
1991	51.7	59.5	18.5, 28.1, 17.8	11.2, 23.2,19.7	23.7, 19.5, 20.6
1992	31.6	53.8	20.1, 19.1, 24.3	8.3, 9.6, 8.8	13.5, 14.8, 13.4

In evaluating the data presented on the graphs, it is important to note that the minimum detectable limit (MDL) varies by laboratory. When the fecal coliform concentration of a sample is less than the laboratory's MDL, the MDL is recorded as that sample's concentration for the purpose of calculating the geometric mean. For this reason, samples analyzed in a laboratory with a higher MDL will tend to show a higher geometric mean than samples analyzed in a laboratory with a lower MDL. The MDL for each county's laboratory is set forth in Table 3 below:

Table 3

County	MDL (fecal coliform/milliliter)
Atlantic	2.0
Cape May	2.0
Middlesex	10.0
Monmouth	2.2
Ocean	10.0

Graphs 1 through 4 are set forth below. The numbered points on the graphs represent the geographic means of the fecal coliform concentrations for the following areas: (1) Long Branch; (2) Seaside Heights; (3) Atlantic City; (4) Ocean City; and (5) the Wildwoods. Table B in the Appendix sets forth all of the monitoring data upon which the graphs for 1991 and 1992 are based. Table B is positioned in the Appendix because of the volume of data it contains; the table includes monitoring results from 331 monitoring stations.

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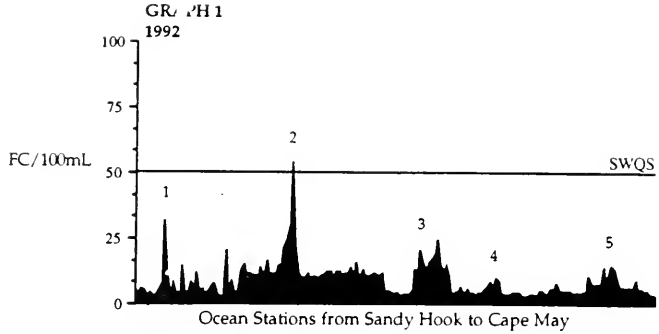
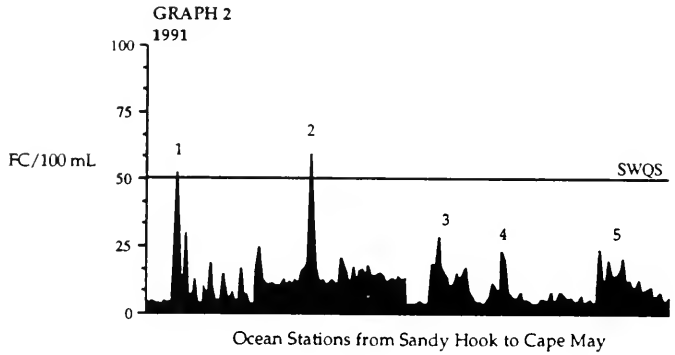
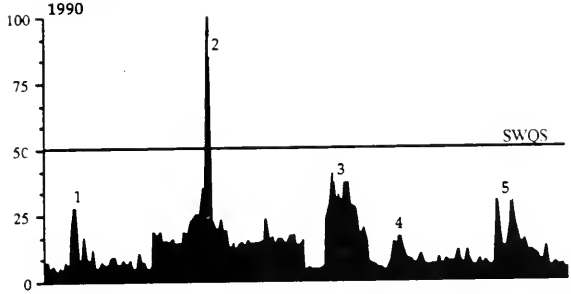

GRAPH 1
1992
100
75
50
25
0
FC/100mL
SWQS
1
2
3
4
5
Ocean Stations from Sandy Hook to Cape May

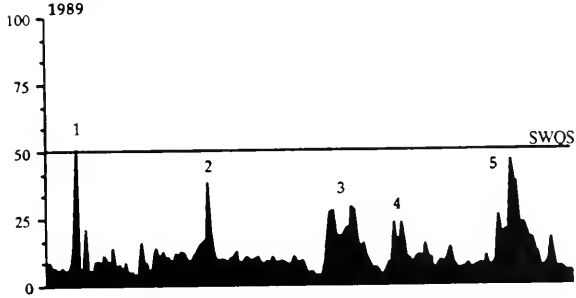

GRAPH 2
1991
100
75
50
25
0
FC/100 mL
SWQS
1
2
3
4
5
Ocean Stations from Sandy Hook to Cape May

GRAPH 3
1990



Ocean Stations from Sandy Hook to Cape May

GRAPH 4
1989



Ocean Stations from Sandy Hook to Cape May

The graphs show that an exceedance of the SWQS has occurred in Seaside Heights (indicated as point number 2 on the graphs) for the past three years. Specifically, the ocean monitoring station at Sheridan Avenue in Seaside Heights has recorded the exceedance. This water quality degradation appears to be attributable to the significant bird population roosting under the amusement pier at this station. This issue is discussed in section III(C) below.

Table 4 lists the number of ocean and bay monitoring stations in each county, and the number of those stations that have shown geometric mean concentrations of fecal coliform in excess of the SWQS. Table 4 includes data from 1990 through 1992.

Table 4

Number of Ocean Stations with Geometric Means Exceeding SWQS /Total Stations

	1990	1991	1992
Atlantic County	0/28	0/29	0/35
Cape May County	0/59	0/59	0/59
Monmouth County	0/36	1/36	0/36
Ocean County	1/50	1/50	1/50
State Total	1/173	2/174	1/180

Number of Bay Stations with Geometric Means Exceeding SWQS/Total Stations

	1990	1991	1992
Atlantic County	0/15	0/15	0/15
Cape May County	1/67	1/68	1/68
Monmouth County	6/27	6/27	3/27
Ocean County	5/45	5/45	1/36
Middlesex County	-	0/5	0/5
State Total	12/154	12/160	5/151

More bay stations than ocean stations had geometric mean concentrations that exceeded the SWQS. DEPE and DOH believe that the difference results in part from the bacteria loadings from stormwater discharges during rainfall. Though 178 point source stormwater discharges are located in the ocean, more than 6,900 point source stormwater discharges are located in the bays.

The bays are also affected by other sources of bacteria that make it impossible to determine the precise effect of stormwater on fecal coliform concentrations. These sources include nonpoint sources of stormwater runoff directed to the bays, polluted tributaries to the bays, the illegal discharge of marine sanitation devices from boats, the presence of large wildlife populations, and the resuspension of bacteria-laden

sediments by boat and wind-created turbulence in shallow waters. However, samples collected in the bays within one or two days after a rainfall, particularly at monitoring stations in shallow, confined areas with relatively low tidal flux such as the Toms River, have been observed to have higher fecal coliform concentrations than samples taken during a dry period. These samples indicate that the stormwater discharges adversely affect the quality of bay water. Samples collected at ocean monitoring stations have shown a similar effect, but the circulation and tidal exchanges of ocean water disperses the stormwater discharged to the ocean more quickly. The relatively rapid dispersion of the stormwater in the ocean reduces effects of the stormwater discharge upon ocean water quality.

3. Exceedance of SWQS by 20% of samples

Water quality problems may be present even when the geometric mean of fecal coliform concentrations does not exceed the SWQS. For example, the geometric mean of the concentrations in samples taken over the course of a season may be below the SWQS even though a substantial percentage of the individual samples taken during the season exceed the SWQS. Accordingly, if 20 percent of the samples from a monitoring station exceed either the SWQS or the PCS, the DEPE and the DOH will work with the appropriate local health agency to investigate whether a water quality problem requiring investigation and remediation exists. Table 5 lists the number of stations in each county for which more than 20 percent of the samples exceed either the SWQS or the PCS. The table also lists the total number of stations in each county.

Table 5

Ocean Monitoring Stations

	20% Exceeding SWQS/Total Stations			20% Exceeding PCS/Total Stations		
	1990	1991	1992	1990	1991	1992
Atlantic County	14/28	6/29	4/35	1/28	0/29	0/35
Cape May County	4/59	1/59	0/59	0/59	0/59	0/59
Monmouth County	5/36	6/36	3/36	0/36	2/36	1/36
Ocean County	7/50	3/50	4/50	1/50	0/50	1/50
State Total	30/173	16/174	11/180	2/173	2/174	2/180

Bay Monitoring Stations

	20% Exceeding SWQS and PCS/Total Stations		
	1990	1991	1992
Atlantic County	6/15	2/15	2/15
Cape May County	20/67	15/68	18/68
Monmouth County	13/27	13/27	12/27
Ocean County	26/45	30/45	20/36
Middlesex County	-	2/5	1/5
State Total	65/154	62/160	53/151

The ocean stations with 20 percent of samples in excess of the standards were located in Atlantic City in Atlantic County; Long Branch, Loch Arbour, and Spring Lake in Monmouth County; and Seaside Heights and Dover Township in Ocean County. As discussed in III(C) below, DEPE and DOH believe that the exceedances in Seaside Heights are attributable to birds roosting under the pier located at that station. DEPE believes that the number of exceedances at the other stations are attributable primarily to stormwater discharges. Possible responses to these problems are discussed in III(E) below.

B. Comparison of Fecal Coliform and Enterococci Concentrations

1. General

As discussed above, the health agencies base their decisions to close beaches upon fecal coliform concentrations. However, in 1986 the United States Environmental Protection Agency ("USEPA") recommended replacing the fecal coliform primary contact guideline with an enterococci guideline. USEPA epidemiological research indicated that the survivability of enterococci in marine waters more closely simulated the survivability of the viral pathogens that cause gastrointestinal ("GI") disease in recreational bathing populations. USEPA's research also indicated that enterococci concentrations directly correlated with the incidence of GI disease when the enterococci was primarily of human origin; the research did not evaluate whether a correlation exists when the enterococci are predominately of lower (nonhuman) animal or avian origin.

The DEPE and the DOH believe that they must collect background enterococci data for the nearshore coastal waters of the state before adopting the USEPA guideline or developing an alternate primary contact standard. The DEPE and DOH are collecting that data and comparing it with fecal coliform data collected simultaneously from the same monitoring stations. The main purpose of that comparison is to determine whether the guideline that USEPA recommends (35 enterococci per 100 mL of sample, which is the same as the SWQS for enterococci) will be at least as effective as the existing fecal coliform primary contact standard. The DEPE's experience with both indicators thus far has shown no material difference in the results they produce.

Part 2 below sets forth the data that the DEPE has collected. Part 3 sets forth USEPA's data. The DEPE monitoring stations are closer than the USEPA stations to the onshore sources of contamination such as stormwater and lake discharges. As a result, the DEPE data for both FC and EC are generally higher than the USEPA data.

2. DEPE data

Table 7 lists the geometric mean of FC and EC concentrations at each of 65 ocean and bay stations for 1992. At station 49, the geometric mean of FC concentrations exceeded the federal primary contact guideline, but the geometric mean of EC

concentrations did not exceed the corresponding federal primary contact guideline. The geometric means for both indicators were within the primary contact guidelines at all other stations.

Table 7

Geometric Means at CCMP Stations Selected for Comparative Fecal Coliform and Enterococci Monitoring

Station	FC	EC	Station	FC	EC	Station	FC	EC
1	27.7	7.0	23	13.8	4.3	45	95.6	11.6
2	166.5	34.9	24	9.1	4.8	46	172.3	19.9
3	15.4	3.8	25	52.6	7.6	47	90.8	12.0
4	16.2	3.3	26	15.2	6.2	48	52.7	9.3
5	3.5	2.9	27	15.5	5.4	49	221.4	33.7
6	3.7	2.5	28	59.0	7.3	50	32.9	4.6
7	4.8	2.6	29	35.1	6.0	51	17.1	6.0
8	6.2	2.4	30	79.2	6.3	52	31.9	6.9
9	5.2	3.3	31	9.6	1.9	53	24.8	7.8
10	12.9	2.8	32	4.6	1.5	54	12.7	4.0
11	16.9	4.8	33	13.5	2.2	55	12.0	3.8
12	3.2	2.6	34	8.9	2.3	56	10.4	3.3
13	4.3	2.4	35	6.1	1.4	57	13.6	3.3
14	5.4	2.1	36	4.1	1.6	58	11.9	4.1
15	55.3	6.1	37	3.8	1.4	59	11.8	3.1
16	163.1	20.4	38	4.5	1.5	60	10.7	3.5
17	51.1	7.6	39	8.6	1.5	61	16.7	3.1
18	48.3	7.8	40	7.6	2.4	62	21.7	4.3
19	6.1	1.3	41	66.7	4.7	63	10.8	3.3
20	4.3	1.2	42	33.5	7.5	64	10.9	4.0
21	8.4	2.4	43	54.3	21.7	65	24.5	3.1
22	5.0	3.0	44	89.4	10.6			

3. *USEPA data*

Table 8 presents the USEPA monitoring program data from stations extending from Sandy Hook through Cape May County. The USEPA data shows substantially lower geometric means for both EC and FC along the entire length of the coast. As noted in 1 above, the lower geometric means are attributable to the greater distance of the USEPA monitoring stations from the onshore sources of contamination.

Table 8

USEPA Station	FC	EC	USEPA Station	FC	EC
JC01A	11	10	JC61	12	10
JC03	11	10	JC63	11	10
JC05	10	11	JC65	11	10
JC08	10	10	JC67	10	10
JC11	10	10	JC69	12	11
JC13	12	10	JC73	10	10
JC14	13	11	JC74	13	11
JC21	12	10	JC75	15	10
JC24	14	11	JC77	10	10
JC26	23	10	JC79	10	10
JC27	12	11	JC81	14	10
JC30	15	10	JC83	12	10
JC33	13	10	JC85	10	11
JC35	14	10	JC87	10	10
JC37	13	10	JC89	10	10
JC41	15	10	JC91	10	10
JC44	12	10	JC92	27	14
JC47A	10	10	JC93	20	10
JC49	13	10	JC95	15	10
JC53	13	10	JC96	17	15
JC55	10	10	JC97	10	10
JC57	10	10	JC99	11	10
JC59	10	10			

C. Ocean Beach Closings in 1992

As noted above, the health agency with jurisdiction over a coastal recreational beach must close the beach for bathing and other primary contact activities when two consecutive samples show fecal coliform concentrations in excess of the primary contact standard. N.J.A.C. 8:26-8.8. DOH regulations also require the health agency to close the beach if the sanitary survey uncovers any condition that may present an imminent hazard to public health. A health agency may also elect to close a beach when an environmental or man-made condition related to excessive concentrations exists. Examples of circumstances supporting these discretionary closings include washups of floatable debris and failures of the sewage infrastructure.

The number and extent of beach closings alone do not conclusively demonstrate coastal water quality. Though beaches are closed when the water quality problems discussed above occur, the absence of beach closings does not establish that no such water quality problems exist. For example, a stormwater discharge could cause an excessive preliminary fecal coliform concentration at a monitoring station; however, if the fecal coliform were dispersed before the confirming sample was taken, the beach would not be closed. In 1992, 38 preliminary samples from ocean

stations exceeded the primary contact standard and were followed by confirming samples within the standard. For these reasons, the DEPE recommends considering the bacterial data and the sanitary surveys in conjunction with the data concerning beach closings in order to evaluate coastal water quality.

Table 9 summarizes the ocean beach closings in 1992. When a recreational beach and a contiguous non-recreational beach were closed together, those beaches appear together on the list. For example, the closing of the beaches at Rosemary and Forgetmenot Avenues on August 19 is listed as one closing. If only a non-recreational beach or only a recreational beach was closed, that beach is listed separately in Table 9.

Twenty-seven beach closings occurred in 1992. Twenty-two of these closings occurred immediately after five days of rain in August. That rain increased stormwater discharges to the nearshore waters, and brought a corresponding increase in the ambient concentrations of fecal coliform. Actions to address this problem are discussed in section III(E) below.

Three closings in Seaside Heights were attributable to the bird populations roosting under the Sheridan Avenue amusement pier. The droppings from those birds contain high concentrations of fecal coliform that raised concentrations of that bacteria in the waters adjacent to the pier. Seaside Heights has been unsuccessful in its attempts to reduce the bird population. Possible actions to address this problem are discussed in section III(E) below.

The remaining two closings occurred in Cape May City and Long Branch. The Cape May City closing occurred when a sewage line backed up and discharged to the stormwater collection system; following that incident, the health agency closed the beach as a precaution until the sampling data showed that the recreational beach was not adversely affected. The beach at Joline Avenue in Long Branch was closed in response to increased ambient concentrations of fecal coliform from an unknown source.

Excessive fecal coliform concentrations or suspected sewage pollution accounted for 26 of the 27 ocean beach closings in 1992. In comparison, 10 ocean beach closings in 1991 were attributable to those causes. No closings were required for floatable debris washups in 1991 or 1992.

Table 9

Ocean Beach Closings

Date	Municipality	Beach
92.05.22	Cape May City	Philadelphia to Madison
92.06.12	Long Branch	Joline
92.07.08	Seaside Heights	Sheridan
92.08.05	Seaside Heights	Sheridan
92.08.06	Seaside Heights	Sherman
92.08.19	Loch Arbour	Edgemont
92.08.19	Asbury Park	Asbury
92.08.19	Ocean Grove	Broadway
92.08.19	Spring Lake	Brown South
92.08.19	Sea Girt	Baltimore
92.08.19	Atlantic City	Arkansas
92.08.19	Atlantic City	Michigan
92.08.19	Atlantic City	Illinois
92.08.19	Atlantic City	Kentucky
92.08.19	Atlantic City	St James
92.08.19	Wildwood Crest	Rosemary, Forgetmenot
92.08.19	Wildwood Crest	Fern
92.08.19	Wildwood Crest	Rambler, Orchid
92.08.19	Wildwood Crest	Stockton
92.08.20	Atlantic City	Arkansas
92.08.20	Wildwood Crest	Forgetmenot
92.08.20	Loch Arbour	Edgemont
92.08.20	Asbury Park	Asbury
92.08.20	Spring Lake	Brown South
92.08.21	Loch Arbour	Edgemont
92.08.21	Asbury Park	Asbury
92.08.22	Loch Arbour	Edgemont

One additional closing occurred in Atlantic City on August 26. This closing was a precautionary measure taken in response to a discharge of a petroleum product from an unknown source. The municipal officials limited the closing of beaches from Boston Avenue to New Hampshire Avenue to less than 24 hours until the extent of the problem was determined and the product dissipated.

D. Bay Beach Closings in 1992

Table 10 lists the closings of bay beaches that occurred in 1992. All of these closings were attributable to excessive concentrations of fecal coliform bacteria loadings from stormwater discharges during rainfall. As noted above, the fecal coliform concentrations recorded at the bay recreational beaches are generally associated with point source discharges of stormwater and nonpoint source overland runoff during rainy periods. In addition, the effects of marsh wildlife, resuspension of bacteria-laden sediment, and marine sanitation device discharges are suspected to contribute to increased concentrations of fecal coliform, though such sources are difficult to identify and their effects cannot easily be quantified.

Table 10

Bay Beach Closings

Date	Municipality	Beach	Date	Municipality	Beach
92.06.24	Beachwood	Beachwood Beach	92.08.20	Island Heights	Summit
92.06.24	Pine Beach	East Beach	92.08.20	Brick	Windward Beach
92.07.07	Island Heights	Summit	92.08.20	Dover	Money Island
92.07.10	Dover	Money Island	92.08.20	Seaside Heights	Hancock
92.07.22	Lavallette	Brooklyn	92.08.20	Beachwood	Beachwood Beach
92.07.23	Cape May	Corinthian Yacht	92.08.20	Pine Beach	West Beach
92.07.24	Cape May	Corinthian Yacht	92.08.20	Pine Beach	East Beach
92.07.25	Dover	Shelter Island	92.08.20	Ocean Gate	Wildwood
92.07.25	Lavallette	Brooklyn	92.08.20	Ocean Gate	Anglesea
92.07.29	Seaside Heights	Hancock	92.08.20	Island Heights	Ocean Bend
92.07.29	Beachwood	Beachwood Beach	92.08.21	Pt Pleasant	Maxon
92.07.30	Seaside Heights	Hancock	92.08.21	Pt Pleasant	River
92.08.05	Lavallette	Reese	92.08.21	Island Heights	Summit
92.08.05	Dover	Money Island	92.08.21	Brick	Windward Beach
92.08.06	Wildwood Crst	Gr Wldwd Yacht	92.08.21	Dover	Money Island
92.08.12	Pine Beach	West Beach	92.08.21	Seaside Heights	Hancock
92.08.13	Pine Beach	West Beach	92.08.21	Beachwood	Beachwood Beach
92.08.19	Pt Pleasant	Maxon	92.08.21	Pine Beach	West Beach
92.08.19	Pt Pleasant	River	92.08.21	Pine Beach	East Beach
92.08.19	Lavallette	Brooklyn	92.08.21	Ocean Gate	Wildwood
92.08.19	Lavallette	Reese	92.08.21	Ocean Gate	Anglesea
92.08.19	Dover	Shelter Island	92.08.21	Island Heights	Ocean Bend
92.08.19	Stafford	Jennifer	92.08.22	Brick	Windward Beach
92.08.19	Berkeley	Berkeley Island	92.08.22	Dover	Money Island
92.08.19	Island Heights	Summit	92.08.22	Seaside Heights	Hancock
92.08.19	Brick	Windward Beach	92.08.22	Beachwood	Beachwood Beach
92.08.19	Dover	Money Island	92.08.22	Pine Beach	West Beach
92.08.19	Seaside Heights	Hancock	92.08.22	Pine Beach	East Beach
92.08.19	Beachwood	Beachwood Beach	92.08.22	Ocean Gate	Wildwood
92.08.19	Ship Bottom	14th	92.08.22	Ocean Gate	Anglesea
92.08.19	Pine Beach	West Beach	92.08.23	Seaside Heights	Hancock
92.08.19	Pine Beach	East Beach	92.08.23	Beachwood	Beachwood Beach
92.08.19	Ocean Gate	Wildwood	92.08.24	Seaside Heights	Hancock
92.08.19	Ocean Gate	Anglesea	92.08.24	Beachwood	Beachwood Beach
92.08.19	Island Heights	Ocean Bend	92.08.25	Seaside Heights	Hancock
92.08.19	Seaside Park	5th	92.08.25	Beachwood	Beachwood Beach
92.08.19	Barnegat	Bay Beach	92.08.26	Pt Pleasant	Maxon
92.08.20	Pt. Pleasant	Maxon	92.08.27	Wildwood Crst	Gr Wldwd Yacht
92.08.20	Pt. Pleasant	River	92.08.28	Dover	Money Island
92.08.20	Lavallette	Brooklyn	92.08.28	Brick	Windward Beach
92.08.20	Lavallette	Reese			
92.08.20	Dover	Shelter Island			
92.08.20	Stafford	Jennifer			
92.08.20	Berkeley	Berkeley Island			

F. Actions to address water quality problems

1. Stormwater discharges

As discussed above, one of the primary purposes of the Sewage Infrastructure Improvement Act is to address the problem of discharges from interconnec ed and cross-connected sanitary and stormwater infrastructure. These interconnections and cross-connections are especially likely to increase bacteria concentrations in coastal waters. Pursuant to the Sewage Infrastructure Improvement Act, the DEPE is working with coastal municipalities to identify and eliminate these interconnections and cross-connections. Over a three-year period the municipalities are mapping their stormwater and sanitary sewer lines, identifying the interconnections and cross-connections, and monitoring outfalls that discharge to coastal waters. These efforts will enable the municipalities to assess why particular areas are susceptible to recurring stormwater impacts. The DEPE will provide technical assistance and work with the municipalities to have these efforts completed within the time frame required under the Act.

The next step will be to abate the interconnections and cross-connections. The DEPE has targeted $4.7 million for grants to plan and design the abatement of interconnections and cross-connections.

DEPE is also providing technical guidance to the municipalities regarding management practices that can reduce bacteria concentrations in stormwater. These practices include cleaning of streets, catch basins and stormwater pipes. Such efforts will assist further in improving coastal water quality.

2. Seaside Heights

As noted above, Seaside Heights saw three closings in 1992 that the DEPE believes were attributable to droppings from the bird populations roosting under the Sheridan Avenue amusement pier. The DEPE believes that the most immediately effective action to protect the beach from the effects of the bird population would be to relocate the beach a short distance away from the pier. This short-term measure would immediately reduce the exposure of recreational bathers to the periodic contamination of ocean water. This should be a short-term measure pending an evaluation of the effectiveness of the bird-dispersal plan. The DEPE will work with the DOH, the Ocean County Health Department and the Borough of Seaside Heights to implement this solution if they agree that it is feasible. For a longer-term solution, DEPE recommends that the Borough of Seaside Heights work with the Ocean County Health Department and the Casino Pier management to develop a plan to disperse the bird population that inhabits the underside of the pier.

TABLE A
1992 MONITORING STATIONS

Atlantic County Cooperative Coastal Monitoring Program Stations

Ocean

CCMPAC1001	Brigantine	North Beach	1
CCMPAC1092	Brigantine	4th St. South	2
CCMPAC1067	Brigantine	10th St. South	3
CCMPAC1004	Brigantine	15th St. South	4
CCMPAC1091	Brigantine	26th St. South	5
CCMPAC1099	Brigantine	33rd St. South	6
CCMPAC1090	Brigantine	43rd St. South	7
CCMPAC1098	Brigantine	Seaside	8
CCMPAC1007	Brigantine	South Beach	9
CCMPAC1012	Atlantic City	New Hampshire	10
CCMPAC1072	Atlantic City	States	11
CCMPAC1015	Atlantic City	Pennsylvania	12E
CCMPAC1073	Atlantic City	South Carolina	13
CCMPAC1070	Atlantic City	Kentucky	14
CCMPAC1074	Atlantic City	Illinois	15
CCMPAC1016	Atlantic City	Arkansas	16
CCMPAC1075	Atlantic City	Missouri	17
CCMPAC1080	Atlantic City	Lincoln	18
CCMPAC1081	Atlantic City	Texas	19
CCMPAC1082	Atlantic City	Michigan	20
CCMPAC1083	Atlantic City	St. James	21
CCMPAC1084	Atlantic City	North Carolina	22
CCMPAC1085	Atlantic City	Bartram	23
CCMPAC1017	Atlantic City	Chelsea	24
CCMPAC1024	Ventnor	Oakland	25
CCMPAC1097	Ventnor	Dorset	26
CCMPAC1089	Ventnor	New Haven	27
CCMPAC1096	Ventnor	Washington	28
CCMPAC1038	Margate	Granville	29
CCMPAC1095	Margate	Osborne	30
CCMPAC1088	Margate	Washington	31
CCMPAC1087	Longport	33rd St.	32
CCMPAC1094	Longport	26th St.	33
CCMPAC1086	Longport	19th St.	34
CCMPAC1044	Longport	11th St.	35

R indicates a bay station with an associated public recreational area.
E indicates an ocean or bay station monitored only for environmental assessment with no associated recreational area. Unless noted with an E, all ocean beaches are associated with recreational areas.

Resampling after an excessive fecal coliform concentration is not required at environmental stations.

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Bay

CCMPAC0005	Brigantine	Public Dock	1R
CCMPAC0009	Atlantic City	Brig Bridge	2E
CCMPAC0065	Atlantic City	Maryland	3E
CCMPAC0071	Atlantic City	Adriatic	4R
CCMPAC0072	Atlantic City	Harrah Pond	5E
CCMPAC0013	Atlantic City	City Island STP	6E
CCMPAC0014	Atlantic City	Missouri & River	7E
CCMPAC0019	Atlantic City	Albany West	8E
CCMPAC0020	Atlantic City	Albany East	9E
CCMPAC0022	Atlantic City	40 & 322	10E
CCMPAC0081	Egg Harbor	Ocean Dr/GEH Inlet	11E
CCMPAC0062	Egg Harbor	LP & SP Blvd	12E
CCMPAC0050	Somers Point	Bay	13R
CCMPAC0080	Somers Point	Rt. 52	14E
CCMPAC0037	Margate	Jerome Ave.	15E

Cape May County Cooperative Coastal Monitoring Program Stations

Ocean

CCMPCC1101	Ocean City	Surf	1
CCMPCC1160	Ocean City	Park	2
CCMPCC1181	Ocean City	North	3
CCMPCC1103	Ocean City	9th	4
CCMPCC1182	Ocean City	16th	5
CCMPCC1162	Ocean City	24th	6
CCMPCC1183	Ocean City	28th	7
CCMPCC1104	Ocean City	34th	8
CCMPCC1184	Ocean City	48th	9
CCMPCC1105	Ocean City	55th	10
CCMPCC1106	Upper Twp	Willard	11
CCMPCC1163	Upper Twp	Webster	12
CCMPCC1185	Sea Isle City	29th	13
CCMPCC1107	Sea Isle City	34th	14
CCMPCC1108	Sea Isle City	40th	15
CCMPCC1186	Sea Isle City	49th	16
CCMPCC1166	Sea Isle City	58th	17
CCMPCC1187	Sea Isle City	65th	18
CCMPCC1188	Sea Isle City	77th	19
CCMPCC1177	Sea Isle City	85th	20
CCMPCC1168	Avalon	9th	21
CCMPCC1189	Avalon	15th	22
CCMPCC1111	Avalon	21st	23
CCMPCC1156	Avalon	30th	24
CCMPCC1051	Avalon	40th	25
CCMPCC1190	Avalon	50th	26
CCMPCC1191	Avalon	57th	27
CCMPCC1178	Avalon	65th	28
CCMPCC1192	Avalon	76th	29

CCMPCC1112	Stone Harbor	83rd	30
CCMPCC1169	Stone Harbor	90th	31
CCMPCC1193	Stone Harbor	96th	32
CCMPCC1179	Stone Harbor	103rd	33
CCMPCC1170	Stone Harbor	108th	34
CCMPCC1171	Stone Harbor	119th	35
CCMPCC1116	North Wildwood	2nd & JFK	36
CCMPCC1210	North Wildwood	10th & JFK	37
CCMPCC1211	North Wildwood	18th	38
CCMPCC1180	North Wildwood	24th	39
CCMPCC1119	Wildwood	Maple	40
CCMPCC1120	Wildwood	Schellenger	41
CCMPCC1121	Wildwood	Montgomery	42
CCMPCC1122	Wildwood	Bennett	43
CCMPCC1175	Wildwood Crest	Lavendar	44
CCMPCC1123	Wildwood Crest	Forgetmenot	45
CCMPCC1195	Wildwood Crest	Orchid	46
CCMPCC1124	Wildwood Crest	Miami	47
CCMPCC1196	Wildwood Crest	Hollywood	48
CCMPCC1125	Wildwood Crest	Jefferson	49
CCMPCC1172	Cape May City	Poverty	50
CCMPCC1129	Cape May City	Queen North	51
CCMPCC1133	Cape May City	Congress	52
CCMPCC1134	Cape May City	Grant	53
CCMPCC1135	Cape May City	Broadway	54
CCMPCC1136	Cape May City	2nd	55
CCMPCC1176	Cape May City	Philadelphia	56
CCMPCC1173	Cape May Point	Whildin	57
CCMPCC1148	Cape May Point	Brainard	58
CCMPCC1174	Cape May Point	Ocean	59

Back Bay

CCMPCC0001	Ocean City	Battersea	1R
CCMPCC0002	Ocean City	3rd	2E
CCMPCC0004	Ocean City	8th & 9th	3E
CCMPCC0005	Ocean City	10th	4E
CCMPCC0008	Ocean City	Tennessee	5E
CCMPCC0010	Ocean City	Beach Creek Mouth	6E
CCMPCC0093	Upper Twp	Beesley's Point	7R
CCMPCC0102	Upper Twp	Ramp	8E
CCMPCC0095	Upper Twp	Sherman & Bayview	9E
CCMPCC0120	Upper Twp	Beesley Pt. Power Plant	10E
CCMPCC0094	Sea Isle City	SIC Yacht Club	11R
CCMPCC0105	Sea Isle City	42nd Boat Ramp	12E
CCMPCC0016	Sea Isle City	42nd & 43rd (middle)	13E
CCMPCC0020	Sea Isle City	Ludlam Thorofare	14E
CCMPCC0025	Avalon	Yacht Club	15R
CCMPCC0026	Avalon	8th	16E
CCMPCC0028	Avalon	5th & 20th	17E
CCMPCC0030	Avalon	23rd Public Pier	18E
CCMPCC0031	Avalon	22nd & 6th	19E
CCMPCC0035	Avalon	33rd	20E

CCMPCC0036	Avalon	37th	21E
CCMPCC0038	Avalon	39th & 4th	22E
CCMPCC0042	Avalon	55th	23E
CCMPCC0045	Avalon	78th	24E
CCMPCC0046	Stone Harbor	81st	25E
CCMPCC0047	Stone Harbor	81st & 82nd	26E
CCMPCC0049	Stone Harbor	90th	27R
CCMPCC0050	Stone Harbor	Marina	28E
CCMPCC0053	Stone Harbor	96th & 97th	29E
CCMPCC0061	North Wildwood	STP	30E
CCMPCC0062	North Wildwood	Creek Mouth	31E
CCMPCC0063	North Wildwood	North Beach Creek Bridge	32E
CCMPCC0065	North Wildwood	Maryland & Chestnut	33E
CCMPCC0066	North Wildwood	10th	34E
CCMPCC0068	North Wildwood	Otten Canal	35E
CCMPCC0108	North Wildwood	6th & New York	36E
CCMPCC0071	Wildwood	Northwest of STP RR	37E
CCMPCC0072	Wildwood	STP	38E
CCMPCC0075	Wildwood	George Reading Bridge	39E
CCMPCC0077	Wildwood	Shawcrest	40E
CCMPCC0080	Wildwood Crest	Sunset Lake STP	41E
CCMPCC0084	Wildwood Crest	Intercoastal Waterway	42E
CCMPCC0098	Wildwood Crest	WW Gables Yacht Club	43R
CCMPCC0096	Wildwood Crest	WW Yacht Club	44R
CCMPCC0086	Lower Twp	N. Ocean Drive	45E
CCMPCC0087	Lower Twp	S. Ocean Drive	46E
CCMPCC0099	Cape May City	Corinthian Yacht Club	47R
CCMPCC0100	Cape May City	Baltimore & Delaware	48E
CCMPCC0115	Cape May City	Lobsterhouse Docks	49E
CCMPCC0116	Cape May City	Cape May Canal Mouth	50E
CCMPCC0117	Cape May City	Skunk Sound Mouth	51E
CCMPCC0118	Cape May City	USCG Center Dock	52E
CCMPCC0106	Cape May Point	Delaware	53E

Delaware Bay

CCMPCC1137	Lower Twp	Sunset	1E
CCMPCC1143	Lower Twp	Ferry	2E
CCMPCC1144	Lower Twp	Lincoln	3E
CCMPCC1145	Lower Twp	Town Bank	4E
CCMPCC1146	Lower Twp	Cox Hall Creek	5E
CCMPCC1141	Lower Twp	Baywyn	6E
CCMPCC1142	Lower Twp	Fern	7E
CCMPCC1147	Lower Twp	Wildwood	8E
CCMPCC1198	Lower Twp	Ferry & Jetty	9E
CCMPCC1199	Lower Twp	Lincoln & Jetty	10E
CCMPCC1200	Lower Twp	Town Bank & Jetty	11E
CCMPCC1201	Lower Twp	Cox Hall Creek & Jetty	12E
CCMPCC1202	Lower Twp	Baywyn & Jetty	13E
CCMPCC1203	Lower Twp	Fern & Jetty	14E
CCMPCC1204	Lower Twp	Wildwood & Jetty	15E

Middlesex County Cooperative Coastal Monitoring Program Stations

Bay

CCMPMX0000	Laurence Harbor	Beach Pier	1E
CCMPMX0000	South Amboy	Boat Club Pier	2E
CCMPMX0003	South Amboy	Coal Docks	3E
CCMPMX0004	Perth Amboy	Raritan Yacht Club	4E
CCMPMX0005	Perth Amboy	Sadowski Park	5E

Monmouth County Cooperative Coastal Monitoring Program Stations

Ocean

CCMPMC1004	Sandy Hook	Army Recreation Beach	1
CCMPMC1006	Sandy Hook	Fort Hancock	2
CCMPMC1008	Sandy Hook	South Beach	3
CCMPMC1010	Sandy Hook	Surf Beach	4
CCMPMC1013	Sea Bright	Public Beach	5
CCMPMC1015	Sea Bright	Island View Way	6
CCMPMC1016	Monmouth Bch	Monmouth Beach Club	7
CCMPMC1018	Monmouth Bch	Seven President's Park	8
CCMPMC1019	Long Branch	Joline	9
CCMPMC1039	Long Branch	Laird	10
CCMPMC1048	Long Branch	Chelsea	11E
CCMPMC1020	Long Branch	South Bath	12
CCMPMC1047	Long Branch	Ocean Beach Club	13
CCMPMC1021	Long Branch	Elberon Beach Club	14
CCMPMC1022	Deal	Deal Casino	15
CCMPMC1041	Allenhurst	Cedar	16
CCMPMC1042	Loch Arbour	Edgemont	17
CCMPMC1024	Asbury Park	3rd	18
CCMPMC1065	Asbury Park	7th	19
CCMPMC1050	Asbury Park	Asbury	20
CCMPMC1051	Ocean Grove	Main	21
CCMPMC1052	Ocean Grove	Broadway	22
CCMPMC1053	Bradley Beach	Ocean Park	23
CCMPMC1054	Bradley Beach	Evergreen South	24
CCMPMC1027	Avon	Sylvania	25
CCMPMC1055	Belmar	6th	26
CCMPMC1056	Belmar	12th	27
CCMPMC1028	Belmar	19th	28
CCMPMC1057	Spring Lake	Worthington	29
CCMPMC1058	Spring Lake	Washington	30
CCMPMC1059	Spring Lake	Essex	31
CCMPMC1060	Spring Lake	Brown South	32
CCMPMC1033	Sea Girt	Beacon	33
CCMPMC1061	Sea Girt	Baltimore	34
CCMPMC1062	Sea Girt	Neptune	35
CCMPMC1036	Manasquan	East Main	36

Bay

CCMPMC0001	Keyport	Broad	1E
CCMPMC0002	Union Beach	Front	2E
CCMPMC0003	Keansburg	Beachway	3E
CCMPMC0044	East Keansburg	Ideal Beach	4E
CCMPMC0045	Leonardo	Thomson	5E
CCMPMC0046	Middletown	Monmouth & Wilson	6E
CCMPMC0005	Sandy Hook	Lighthouse	7E
CCMPMC0007	Sandy Hook	Horseshoe Cove	8E
CCMPMC0009	Sandy Hook	Spermacetti	9E
CCMPMC0014	Sea Bright	520	10E
CCMPMC0049	Highlands	Recreation Center	11R
CCMPMC0050	Highlands	Miller Beach	12R
CCMPMC0051	Highlands	South Bay Ave	13R
CCMPMC0052	Highlands	Conner's Beach	14R
CCMPMC0017	Monmouth Bch	Wharfside Manor Condos	15E
CCMPMC0030	Belmar	71 Bridge	16E
CCMPMC0031	Belmar	L Street Beach	17E
CCMPMC0037	Neptune	Myron & Wilson	18E
CCMPMC0038	Neptune Twp	Riverside & Clinton	19E
CCMPMC0064	Manasquan	Brielle & Manasquan Rvr	20E
CCMPMC0035	Manasquan	2nd	21E
CCMPMC0056	Red Bank	Cooper's Bridge	22E
CCMPMC0057	Red Bank	Newman & Swimming Rvr	23E
CCMPMC0058	Red Bank	Hubbard & Shadow Lake	24E
CCMPMC0059	Long Branch	Branchport Ave. & Creek	25E
CCMPMC0060	Shrewsbury	Oceanport Ave. & Creek	26E
CCMPMC0061	Shrewsbury	Oceanport & Parkers Cr	27E

Ocean County Cooperative Coastal Monitoring Program Stations

Ocean

CCMPOC1001	Pt Pleasant Bch	Broadway	1
CCMPOC1002	Pt Pleasant Bch	Central	2
CCMPOC1135	Pt Pleasant Bch	Maryland	3
CCMPOC1004	Bay Head	Mount	4
CCMPOC1005	Bay Head	Johnson	5
CCMPOC1012	Mantoloking	Lyman	6
CCMPOC1014	Mantoloking	Princeton	7
CCMPOC1019	Brick	Brick Beach	8
CCMPOC1020	Brick	7th	9
CCMPOC1089	Chadwick	East Tuna Way	10
CCMPOC1094	Lavallette	Bryn Mawr	11
CCMPOC1025	Lavallette	Guyer	12
CCMPOC1024	Lavallette	Brooklyn	13
CCMPOC1027	Lavallette	Jersey City	14
CCMPOC1029	Lavallette	Trenton	15
CCMPOC1130	Dover	4th	16
CCMPOC1129	Dover	Fielder	17
CCMPOC1033	Dover	North Beach	18

CCMPOC1035	Seaside Heights	Sheridan	19
CCMPOC1095	Seaside Heights	Lincoln	20
CCMPOC1044	Seaside Park	0 St	21
CCMPOC1096	Seaside Park	Brighton	22
CCMPOC1042	Seaside Park	12th	23
CCMPOC1046	South Seaside	23rd	24
CCMPOC1086	Island Beach	USCG 110	25
CCMPOC1085	Island Beach	Ocean Area 1	26
CCMPOC1090	Island Beach	Access Road	27
CCMPOC1084	Island Beach	A23	28
CCMPOC1048	Barnegat Light	10th	29
CCMPOC1050	Barnegat Light	24th	30
CCMPOC1052	Loveladies	Loveladies	31
CCMPOC1054	Harvey Cedars	75th	32
CCMPOC1097	Harvey Cedars	Atlantic	33
CCMPOC1058	Harvey Cedars	Bergen	34
CCMPOC1098	North Beach	Roxie	35
CCMPOC1062	Surf City	23rd	36
CCMPOC1099	Surf City	North 10th	37
CCMPOC1100	Ship Bottom	South 3rd	38
CCMPOC1068	Ship Bottom	14th	39
CCMPOC1070	Ship Bottom	25th	40
CCMPOC1091	Brant Beach	50th	41
CCMPOC1072	Brant Beach	Stockton	42
CCMPOC1101	Haven Beach	Florida	43
CCMPOC1076	BchHvn Terrace	New Jersey	44
CCMPOC1102	Beach Haven	14th	45
CCMPOC1092	Beach Haven	Berkeley	46
CCMPOC1080	Beach Haven	Leeward	47
CCMPOC1093	Beach Haven	Webster	48
CCMPOC1078	Beach Haven	Taylor	49
CCMPOC1082	So Bch Haven	Joan	50

Bay

CCMPOC0109	Pt Pleasant	Maxon	1R
CCMPOC0110	Pt Pleasant	River	2R
CCMPOC0103	Brick	Windward Beach	3R
CCMPOC0023	Lavallette	Reese	4R
CCMPOC0030	Lavallette	Pershing	5E
CCMPOC0138	Lavallette	Brooklyn	6R
CCMPOC0036	Seaside Heights	Hancock	7R
CCMPOC0133	Seaside Heights	Lincoln	8E
CCMPOC0132	Seaside Park	5th	9R
CCMPOC0043	Seaside Park	12th	10E
CCMPOC0087	Island Beach	Winter Anchor	11E
CCMPOC0088	Island Beach	Paul South	12E
CCMPOC0112	Dover	Shelter Island	13R
CCMPOC0114	Island Heights	Ocean Bend	14R
CCMPOC0113	Island Heights	Central	15E
CCMPOC0115	Island Heights	Summit	16R
CCMPOC0111	Dover	Money Island	17R
CCMPOC0116	Beachwood	Beachwood Beach	18R
CCMPOC0118	Pine Beach	West Beach	19R

CCMPOC0117	Pine Beach	East Beach	20R
CCMPOC0119	Ocean Gate	Wildwood	21R
CCMPOC0140	Ocean Gate	Anglesea	22R
CCMPOC0122	Berkeley	Berkeley Island	23R
CCMPOC0124	Barnegat	Bay Beach	24R
CCMPOC0125	Stafford	Jennifer	25R
CCMPOC0126	Little Egg Hrbr	Parkertown	26R
CCMPOC0139	Barnegat Light	4th	27E
CCMPOC0134	Barnegat Light	17th	28E
CCMPOC0142	Barnegat Light	21st	29R
CCMPOC0055	Harvey Cedars	75th	30R
CCMPOC0136	Surf City	16th	31R
CCMPOC0069	Ship Bottom	14th	32R
CCMPOC0073	Bch Hvn Crest	Stockton	33R
CCMPOC0077	BchHvn Terrace	New Jersey	34R
CCMPOC0079	Beach Haven	Taylor	35E
CCMPOC0083	So Beach Haven	Joan	36E

TABLE B

1992 Atlantic County Cooperative Coastal Monitoring Program Stations

Ocean Stations	Geometric Means		Percentage of Samples Exceeding SWQS 50		Percentage of Samples Exceeding FCS 200	
	1991	1992	1991	1992	1991	1992
CCMPAC1001	3.6	3.5	5.3	5.3	0.0	0.0
CCMPAC1004	3.9	3.8	5.3	5.0	0.0	5.0
CCMPAC1007	3.6	3.7	10.5	5.0	0.0	5.0
CCMPAC1012	4.8	5.2	5.3	5.3	0.0	0.0
CCMPAC1015	17.7	12.7	•21.1	10.5	0.0	5.3
CCMPAC1016	14.9	24.3	15.8	•26.3	0.0	10.5
CCMPAC1017	17.4	14.9	•36.8	15.8	0.0	0.0
CCMPAC1024	5.5	4.8	0.0	0.0	0.0	0.0
CCMPAC1038	4.0	6.2	5.3	10.5	0.0	0.0
CCMPAC1044	5.6	5.2	5.3	5.6	0.0	0.0
CCMPAC1067	4.1	4.3	5.3	5.0	0.0	5.0
CCMPAC1070	13.0	15.8	19.0	10.0	14.3	5.0
CCMPAC1072	18.5	12.9	15.8	10.5	0.0	5.3
CCMPAC1073	17.8	15.7	•21.1	•21.1	5.3	5.3
CCMPAC1074	9.7	16.9	15.0	15.0	0.0	15.0
CCMPAC1075	12.4	15.0	•21.1	•21.1	0.0	0.0
CCMPAC1080	8.6	10.4	15.8	15.8	0.0	0.0
CCMPAC1081	14.4	12.0	•21.1	10.5	5.3	0.0
CCMPAC1082	11.5	19.1	10.5	20.0	0.0	5.0
CCMPAC1083	15.2	12.6	15.0	10.0	5.0	5.0
CCMPAC1084	28.1	20.1	•25.0	•31.6	10.0	5.3
CCMPAC1085	7.4	4.5	5.0	5.3	5.0	0.0
CCMPAC1086	5.5	4.9	0.0	0.0	0.0	0.0
CCMPAC1087	3.5	3.2	0.0	0.0	0.0	0.0
CCMPAC1088	4.7	4.8	0.0	10.5	0.0	0.0

continued . . .

* Stations with associated public recreational areas

• Indicates geometric mean exceeded the SWQS or that more than 20 percent of samples at a station exceeded the SWQS and/or the FCS

CCMPAC1089	4.5	6.9	5.3	0.0	0.0	0.0
CCMPAC1090	3.7	3.9	10.5	5.0	0.0	5.0
CCMPAC1091	4.5	4.3	5.3	10.0	0.0	5.0
CCMPAC1092	4.2	5.4	5.3	5.3	0.0	0.0
CCMPAC1094	-	4.8	-	5.3	-	0.0
CCMPAC1095	-	4.6	-	10.5	-	0.0
CCMPAC1096	-	4.1	-	10.5	-	0.0
CCMPAC1097	-	5.3	-	10.5	-	0.0
CCMPAC1098	-	3.9	-	5.0	-	5.0
CCMPAC1099	-	3.6	-	5.3	-	5.3

1992 Atlantic County Cooperative Coastal Monitoring Program Stations

Bay Stations	Geometric Means		Percentage of Samples Exceeding SWQS 200 & PCS 200	
	1991	1992	1991	1992
CCMPAC0005*	17.8	27.7	0.0	5.3
CCMPAC0009	50.2	166.5	•31.6	•47.4
CCMPAC0013	45.7	44.0	11.1	5.3
CCMPAC0014	20.4	28.0	5.6	5.3
CCMPAC0019	27.7	15.6	5.6	0.0
CCMPAC0020	84.4	139.4	•22.2	•31.6
CCMPAC0022	17.8	17.2	0.0	0.0
CCMPAC0037	12.5	12.7	5.3	0.0
CCMPAC0050*	20.6	15.4	18.2	0.0
CCMPAC0062	13.9	17.3	10.5	5.3
CCMPAC0065	12.7	16.2	5.6	5.3
CCMPAC0071*	10.2	10.9	0.0	0.0
CCMPAC0072	25.3	25.1	0.0	0.0
CCMPAC0080	8.3	8.9	0.0	0.0
CCMPAC0081	8.4	13.6	5.3	5.3

1992 Cape May County Cooperative Coastal Monitoring Program Stations

Ocean Stations	Geometric Means		Percentage of Samples Exceeding SWQS 50		Percentage of Samples Exceeding PCS 200	
	1991	1992	1991	1992	1991	1992
CCMPCC1051	5.6	8.1	10.5	5.0	0.0	0.0
CCMPCC1101	11.2	6.8	15.0	0.0	5.0	0.0
CCMPCC1103	23.2	9.6	14.3	5.3	9.5	0.0
CCMPCC1104	6.1	3.9	5.3	0.0	0.0	0.0
CCMPCC1105	7.6	4.9	5.3	0.0	0.0	0.0
CCMPCC1106	5.2	4.6	0.0	0.0	0.0	0.0
CCMPCC1107	3.7	3.2	0.0	0.0	0.0	0.0
CCMPCC1108	4.2	3.4	5.3	0.0	0.0	0.0
CCMPCC1111	7.7	6.1	5.0	5.3	5.0	0.0
CCMPCC1112	6.6	4.3	0.0	0.0	0.0	0.0
CCMPCC1116	23.7	10.4	19.0	15.0	9.5	0.0
CCMPCC1119	14.4	7.3	•23.8	5.0	9.5	0.0
CCMPCC1120	14.1	13.5	14.3	14.3	9.5	4.8
CCMPCC1121	14.6	7.7	19.0	0.0	9.5	0.0
CCMPCC1122	16.2	12.3	14.3	10.0	9.5	0.0
CCMPCC1123	12.0	13.4	9.5	13.0	9.5	13.0
CCMPCC1124	9.5	6.9	9.5	0.0	9.5	0.0
CCMPCC1125	12.8	5.9	9.5	5.0	9.5	0.0
CCMPCC1129	9.0	8.9	10.5	5.0	0.0	0.0
CCMPCC1133	9.6	6.2	5.0	5.0	5.0	0.0
CCMPCC1134	6.4	5.7	5.3	0.0	0.0	0.0
CCMPCC1135	6.7	5.1	5.3	5.0	0.0	0.0
CCMPCC1136	8.1	5.2	5.3	0.0	0.0	0.0
CCMPCC1148	5.8	3.1	5.3	0.0	0.0	0.0
CCMPCC1156	7.2	6.1	5.3	0.0	0.0	0.0
CCMPCC1160	9.1	8.3	10.5	5.9	0.0	0.0
CCMPCC1162	8.0	4.5	10.0	0.0	5.0	0.0
CCMPCC1163	5.0	4.3	0.0	0.0	0.0	0.0
CCMPCC1166	5.1	3.7	0.0	0.0	0.0	0.0
CCMPCC1168	4.8	4.1	0.0	0.0	0.0	0.0
CCMPCC1169	4.1	3.9	0.0	0.0	0.0	0.0

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CCMPCC1170	4.1	4.9	0.0	5.0	0.0	0.0
CCMPCC1171	4.7	5.0	5.3	0.0	0.0	0.0
CCMPCC1172	8.0	6.4	5.3	0.0	0.0	0.0
CCMPCC1173	4.9	4.1	5.3	0.0	0.0	0.0
CCMPCC1174	4.8	4.1	5.3	0.0	0.0	0.0
CCMPCC1175	20.6	14.8	19.0	9.5	9.5	4.8
CCMPCC1176	8.7	5.8	5.3	0.0	0.0	0.0
CCMPCC1177	7.7	5.3	0.0	0.0	0.0	0.0
CCMPCC1178	4.9	4.5	5.3	5.0	0.0	0.0
CCMPCC1179	5.3	4.0	0.0	4.8	0.0	4.8
CCMPCC1180	19.5	7.6	19.0	0.0	9.5	0.0
CCMPCC1181	8.2	5.9	15.8	0.0	0.0	0.0
CCMPCC1182	19.7	8.8	18.2	0.0	13.6	0.0
CCMPCC1183	7.1	4.1	5.0	0.0	5.0	0.0
CCMPCC1184	6.1	3.7	0.0	0.0	0.0	0.0
CCMPCC1185	4.5	3.2	0.0	0.0	0.0	0.0
CCMPCC1186	4.1	3.8	0.0	0.0	0.0	0.0
CCMPCC1187	5.5	3.6	5.3	0.0	0.0	0.0
CCMPCC1188	4.8	5.0	0.0	0.0	0.0	0.0
CCMPCC1189	5.3	4.2	5.0	0.0	5.0	0.0
CCMPCC1190	5.1	5.0	5.3	5.0	0.0	0.0
CCMPCC1191	6.0	5.2	5.3	4.8	0.0	4.8
CCMPCC1192	4.7	5.4	0.0	9.5	0.0	4.8
CCMPCC1193	4.7	4.5	14.3	5.0	0.0	0.0
CCMPCC1195	12.7	8.6	14.3	9.1	9.5	9.1
CCMPCC1196	9.8	6.3	9.5	0.0	9.5	0.0
CCMPCC1210	12.3	7.6	14.3	0.0	9.5	0.0
CCMPCC1211	10.8	7.5	15.0	0.0	5.0	0.0

1992 Cape May County Cooperative Coastal Monitoring Program Stations

Bay Stations	Geometric Means		Percentage of Samples Exceeding SWQS 200 & PCS 200	
	1991	1992	1991	1992
CCMPCC0001*	17.5	13.8	5.0	6.3
CCMPCC0002	30.4	14.4	13.7	6.7
CCMPCC0004	130.4	85.0	•46.7	•33.3
CCMPCC0005	26.9	31.1	20.0	13.7
CCMPCC0008	25.0	25.8	13.7	20.0
CCMPCC0010	3.1	6.3	0.0	0.0
CCMPCC0016	98.2	48.6	13.7	20.0
CCMPCC0020	10.8	9.2	7.7	7.1
CCMPCC0025*	15.6	9.1	5.0	0.0
CCMPCC0026	24.6	10.5	6.7	6.7
CCMPCC0028	31.0	14.1	6.7	6.7
CCMPCC0030	54.3	10.3	20.0	7.1
CCMPCC0031	8.1	13.7	0.0	13.7
CCMPCC0035	42.9	13.4	13.7	6.7
CCMPCC0036	49.5	14.3	20.0	6.7
CCMPCC0038	63.4	13.5	•28.6	6.7
CCMPCC0042	36.4	14.7	20.0	13.7
CCMPCC0045	55.4	48.9	20.0	20.0
CCMPCC0046	49.0	70.8	20.0	•33.3
CCMPCC0047	81.2	76.9	•33.3	6.7
CCMPCC0049*	30.2	52.6	13.6	•21.1
CCMPCC0050	98.2	197.5	•40.0	•46.7
CCMPCC0053	44.1	147.7	20.0	•46.7
CCMPCC0061	21.4	41.3	6.7	6.7
CCMPCC0062	64.8	31.4	15.4	0.0
CCMPCC0063	54.4	43.6	7.1	16.7
CCMPCC0065	42.8	49.4	13.7	13.7
CCMPCC0066	30.2	54.9	6.7	13.7
CCMPCC0068	21.9	33.7	13.7	20.0
CCMPCC0071	68.3	90.3	•33.3	•40.0
CCMPCC0072	66.3	57.1	20.0	20.0
CCMPCC0075	58.0	43.2	20.0	•26.7

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CCMPCC0077	100.1	29.7	•40.0	20.0
CCMPCC0080	66.2	88.4	20.0	•25.0
CCMPCC0084	32.4	44.6	9.1	•27.3
CCMPCC0086	•243.8	•266.1	•60.0	•71.4
CCMPCC0087	121.0	23.3	•46.7	20.0
CCMPCC0093*	24.8	15.2	9.5	11.8
CCMPCC0094*	21.3	15.5	9.5	6.3
CCMPCC0095	12.3	18.3	0.0	13.7
CCMPCC0096*	55.2	59.0	17.4	•21.1
CCMPCC0098*	36.1	35.1	5.0	6.3
CCMPCC0099*	55.4	79.2	5.3	•28.6
CCMPCC0100	129.4	66.8	•40.0	20.0
CCMPCC0102	19.6	13.1	13.7	13.7
CCMPCC0105	19.3	29.1	13.7	20.0
CCMPCC0106	101.6	39.6	•33.3	13.7
CCMPCC0108	37.8	57.4	6.7	20.0
CCMPCC0115	99.9	142.3	•26.7	•53.3
CCMPCC0116	67.5	44.7	•33.3	14.3
CCMPCC0117	39.2	18.7	•23.1	0.0
CCMPCC0118	57.1	86.8	20.0	•28.6
CCMPCC0120	18.8	11.5	0.0	0.0
CCMPCC1137	10.0	8.8	11.1	0.0
CCMPCC1141	57.1	93.8	•22.2	•30.0
CCMPCC1142	61.6	91.2	•22.2	•30.0
CCMPCC1143	17.5	11.7	0.0	5.0
CCMPCC1144	8.1	9.4	5.6	0.0
CCMPCC1145	16.3	17.1	11.1	5.0
CCMPCC1146	48.6	79.9	5.6	•25.0
CCMPCC1147	87.0	69.9	16.7	•25.0
CCMPCC1198	3.4	2.8	0.0	0.0
CCMPCC1199	3.4	3.2	0.0	0.0
CCMPCC1200	5.6	3.5	0.0	0.0
CCMPCC1201	7.9	4.7	0.0	0.0
CCMPCC1202	6.7	6.5	0.0	0.0
CCMPCC1203	8.0	4.7	0.0	0.0
CCMPCC1204	9.6	7.7	11.1	10.0

1992 Middlesex County Cooperative Coastal Monitoring Program Stations

Bay Stations	Geometric Means		Percentage of Samples Exceeding SWQS 200 & PCS 200	
	1991	1992	1991	1992
CCMPMX0001	38.4	15.0	10.5	0.0
CCMPMX0002	162.5	49.3	•36.8	18.8
CCMPMX0003	22.6	34.7	10.5	13.7
CCMPMX0004	31.4	29.6	10.5	12.5
CCMPMX0005	43.2	50.0	•21.1	•25.0

Ocean Stations	Geometric Means		Percentage of Samples Exceeding SWQS 50		Percentage of Samples Exceeding PCS 200	
	1991	1992	1991	1992	1991	1992
CCMPMC1004	4.4	5.5	5.3	10.5	0.0	0.0
CCMPMC1006	3.3	4.1	5.3	10.5	0.0	0.0
CCMPMC1008	4.3	6.1	5.0	10.0	5.0	10.0
CCMPMC1010	3.9	5.5	5.3	10.5	0.0	0.0
CCMPMC1013	3.8	2.7	5.3	0.0	0.0	0.0
CCMPMC1015	3.5	4.4	0.0	0.0	0.0	0.0
CCMPMC1016	4.3	3.1	10.0	0.0	5.0	0.0
CCMPMC1018	4.2	3.0	5.0	0.0	5.0	0.0
CCMPMC1019	4.6	5.0	5.3	0.0	0.0	0.0
CCMPMC1020	22.0	11.0	•27.3	19.0	18.2	9.5
CCMPMC1021	29.7	8.3	•37.9	10.5	•31.0	0.0
CCMPMC1022	5.2	4.3	5.3	5.3	0.0	0.0
CCMPMC1024	4.4	4.5	5.3	5.3	0.0	0.0
CCMPMC1027	5.2	4.0	0.0	5.3	0.0	0.0
CCMPMC1028	4.8	7.8	0.0	15.0	0.0	5.0
CCMPMC1033	4.7	5.0	5.3	0.0	0.0	0.0
CCMPMC1036	3.5	4.3	0.0	5.3	0.0	5.3
CCMPMC1039	17.1	8.2	•31.6	10.0	10.5	5.0
CCMPMC1041	7.6	4.6	0.0	5.3	0.0	0.0
CCMPMC1042	12.5	14.4	9.5	•25.0	9.5	16.7
CCMPMC1047	4.3	2.7	10.5	0.0	5.3	0.0
CCMPMC1048	•51.7	31.6	•52.6	•42.1	•26.3	•26.3
CCMPMC1050	10.0	8.4	9.5	17.4	9.5	13.0
CCMPMC1051	5.8	5.9	10.0	5.3	5.0	0.0
CCMPMC1052	18.1	12.0	•28.6	18.2	9.5	9.1
CCMPMC1053	9.9	5.5	10.5	10.0	0.0	5.0
CCMPMC1054	4.9	5.6	0.0	5.3	0.0	0.0
CCMPMC1055	14.5	5.0	•25.0	10.5	10.0	0.0
CCMPMC1056	10.8	7.4	15.0	15.8	5.0	0.0
CCMPMC1057	7.8	4.4	10.5	0.0	0.0	0.0

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CCMPMC1058	6.0	3.6	15.8	10.5	0.0	0.0
CCMPMC1059	4.2	3.5	10.5	5.3	0.0	0.0
CCMPMC1060	16.7	20.5	19.0	•20.8	9.5	12.5
CCMPMC1061	7.2	9.3	10.5	18.2	0.0	9.1
CCMPMC1062	4.1	4.0	5.3	0.0	0.0	0.0
CCMPMC1065	3.5	4.0	5.3	5.3	0.0	0.0

1992 Monmouth County Cooperative Coastal Monitoring Program Stations

Bay Stations	Geometric Means		Percentage of Samples Exceeding SWQS 200 & PCS 200	
	1991	1992	1991	1992
CCMPMC0001	114.7	132.7	•31.6	•36.8
CCMPMC0002	48.2	54.6	•26.3	•21.1
CCMPMC0003	85.2	55.3	•21.1	•21.1
CCMPMC0005	18.9	15.5	10.5	10.5
CCMPMC0007	17.4	14.8	0.0	10.5
CCMPMC0009	13.1	7.9	5.3	0.0
CCMPMC0014	24.2	18.4	5.3	5.3
CCMPMC0017	44.2	41.2	•21.1	10.5
CCMPMC0030	32.1	21.0	5.3	5.3
CCMPMC0031	92.4	47.4	•31.6	10.5
CCMPMC0035	164.0	163.1	•42.1	•36.8
CCMPMC0037	71.8	51.1	•21.1	•21.1
CCMPMC0038	23.9	44.7	10.5	15.8
CCMPMC0044	12.2	48.3	5.3	15.8
CCMPMC0045	10.1	31.5	0.0	•21.1
CCMPMC0046	15.9	22.7	10.5	10.5
CCMPMC0049*	22.0	15.9	18.2	9.5
CCMPMC0050*	25.6	18.1	9.5	5.0
CCMPMC0051*	50.0	26.3	9.5	5.0
CCMPMC0052*	11.2	26.5	0.0	9.5
CCMPMC0056	•429.0	120.4	•61.5	•50.0
CCMPMC0057	•942.6	•563.8	•92.3	•100.0
CCMPMC0058	•247.6	116.1	•84.6	•37.5
CCMPMC0059	•770.7	•247.5	•92.3	•50.0
CCMPMC0060	•763.9	197.7	•84.6	•37.5
CCMPMC0061	•280.4	•216.1	•61.5	•62.5
CCMPMC0064	45.7	26.9	10.5	5.6

1992 Ocean County Cooperative Coastal Monitoring Program Stations

Ocean Stations	Geometric Means		Percentage of Samples Exceeding SWQS 50		Percentage of Samples Exceeding PCS 200	
	1991	1992	1991	1992	1991	1992
CCMPOC1001	15.6	12.7	9.5	0.0	0.0	0.0
CCMPOC1002	24.1	14.9	•25.0	10.5	10.0	10.0
CCMPOC1004	12.1	12.0	5.3	5.3	0.0	0.0
CCMPOC1005	10.8	11.3	0.0	0.0	0.0	0.0
CCMPOC1012	11.0	11.2	0.0	5.3	0.0	0.0
CCMPOC1014	10.6	10.4	0.0	0.0	0.0	0.0
CCMPOC1019	10.4	13.6	0.0	0.0	0.0	0.0
CCMPOC1020	10.4	10.8	0.0	0.0	0.0	0.0
CCMPOC1024	10.4	11.9	0.0	0.0	0.0	0.0
CCMPOC1025	11.7	11.8	0.0	5.3	0.0	0.0
CCMPOC1027	12.4	14.6	5.0	10.0	0.0	5.0
CCMPOC1029	11.4	15.3	0.0	10.5	0.0	0.0
CCMPOC1033	18.4	30.2	11.1	•31.9	0.0	0.0
CCMPOC1035	•59.5	•53.8	•53.8	•51.9	19.2	•22.2
CCMPOC1042	12.8	10.0	5.0	0.0	0.0	0.0
CCMPOC1044	16.9	11.8	9.5	0.0	4.8	0.0
CCMPOC1046	10.6	11.8	0.0	5.3	0.0	0.0
CCMPOC1048	20.1	11.2	20.0	0.0	5.0	0.0
CCMPOC1050	16.9	11.2	•23.8	0.0	4.8	0.0
CCMPOC1052	16.0	12.7	15.8	5.0	0.0	0.0
CCMPOC1054	10.8	12.2	0.0	5.0	0.0	5.0
CCMPOC1058	11.4	12.3	5.3	5.0	0.0	5.0
CCMPOC1062	16.7	11.2	15.0	5.3	10.0	0.0
CCMPOC1068	13.8	10.7	11.1	0.0	0.0	0.0
CCMPOC1070	14.2	14.0	10.0	5.0	5.0	5.0
CCMPOC1072	15.3	10.0	10.5	0.0	0.0	0.0
CCMPOC1076	11.4	11.2	0.0	0.0	0.0	0.0
CCMPOC1078	12.7	10.8	5.0	0.0	0.0	0.0
CCMPOC1080	11.6	11.6	5.0	0.0	0.0	0.0
CCMPOC1082	13.1	11.8	4.5	5.3	4.5	0.0
CCMPOC1084	10.0	10.0	0.0	0.0	0.0	0.0

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CCMPOC1085	12.6	10.8	5.3	0.0	0.0	0.0
CCMPOC1086	10.9	10.0	0.0	0.0	0.0	0.0
CCMPOC1089	12.4	16.7	2.2	19.1	0.0	0.0
CCMPOC1090	11.5	10.4	5.3	0.0	0.0	0.0
CCMPOC1091	14.3	15.7	4.8	10.0	4.8	5.0
CCMPOC1092	13.4	11.2	10.5	0.0	0.0	0.0
CCMPOC1093	14.1	11.0	10.0	0.0	5.0	0.0
CCMPOC1094	10.0	11.8	0.0	0.0	0.0	0.0
CCMPOC1095	28.7	21.7	16.0	•22.2	8.0	5.6
CCMPOC1096	11.6	10.8	5.3	0.0	0.0	0.0
CCMPOC1097	17.2	10.0	10.0	0.0	5.0	0.0
CCMPOC1098	15.6	12.2	10.5	5.0	0.0	0.0
CCMPOC1099	14.0	11.9	4.5	5.3	4.5	0.0
CCMPOC1100	17.7	10.9	15.8	0.0	5.3	0.0
CCMPOC1101	14.0	13.3	5.0	5.3	5.0	5.0
CCMPOC1102	12.7	10.4	5.3	0.0	0.0	0.0
CCMPOC1129	16.9	24.5	10.9	•25.5	0.0	0.0
CCMPOC1130	15.5	21.3	15.6	17.0	0.0	0.0
CCMPOC1135	12.5	11.7	5.3	5.3	0.0	0.0

1992 Ocean County Cooperative Coastal Monitoring Program Stations

Bay Stations	Geometric Means		Percentage of Samples Exceeding SWQS 200 & FCS 200	
	1991	1992	1991	1992
CCMPOC0023*	140.4	66.7	•40.7	•26.1
CCMPOC0030	42.1	46.0	16.7	18.2
CCMPOC0036*	•560.0	188.0	•68.3	•45.2
CCMPOC0043	115.8	29.6	•35.7	5.6
CCMPOC0055*	27.6	17.4	16.7	0.0
CCMPOC0069*	62.6	40.6	•25.0	15.0
CCMPOC0073*	106.3	33.5	•38.5	11.1
CCMPOC0077*	76.4	54.3	•32.1	14.3
CCMPOC0079	153.3	89.4	•40.9	•35.3
CCMPOC0083	54.3	95.6	•21.1	•41.2
CCMPOC0087	43.2	31.9	11.8	11.1
CCMPOC0088	50.6	59.9	16.7	17.6
CCMPOC0103*	185.3	172.3	6.0	•48.4
CCMPOC0109*	99.2	86.8	•27.3	•26.9
CCMPOC0110*	128.2	90.8	•30.4	•36.0
CCMPOC0111*	134.4	137.3	•39.6	•36.2
CCMPOC0112*	26.1	27.0	7.5	10.9
CCMPOC0113	•215.5	126.4	•61.8	•38.5
CCMPOC0114*	54.3	90.0	•25.9	•36.0
CCMPOC0115*	26.1	52.7	0.0	•24.0
CCMPOC0116*	•283.6	•221.4	•68.2	•56.8
CCMPOC0117*	93.4	146.5	•34.3	•38.7
CCMPOC0118*	152.0	145.5	•47.6	•45.5
CCMPOC0119*	100.5	130.6	•37.0	•32.0
CCMPOC0122*	44.1	32.9	20.0	15.0
CCMPOC0124*	47.5	24.0	20.0	10.5
CCMPOC0125*	117.0	62.2	•36.0	15.0
CCMPOC0126*	49.3	17.1	•27.3	0.0
CCMPOC0132*	104.9	56.6	•39.3	•24.0
CCMPOC0133	•274.4	112.4	•59.5	•40.0
CCMPOC0134	90.3	40.5	•45.0	•23.5

continued . . .

CCMP0C0136*	63.8	31.9	•25.0	10.5
CCMP0C0138*	62.7	59.4	•28.0	•29.2
CCMP0C0139	35.8	24.8	16.7	0.0
CCMP0C0140*	62.7	73.3	•28.0	•26.1
CCMP0C0142*	-	58.7	-	12.5

TABLE C

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 18 May-22 May			NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 18 May-22 May			flight shortened for weather	NY Harbor and Sandy Hook to Sea Girt			
Comments on Actual Activities for 18 May-22 May				No Significant Sightings (NSS); short flight due to weather		NSS; northern beaches not yet cleaned for season	brown and green algae off Ocean County and in Sandy Hook Bay, dispersed trash off Manasquan
				1.7 helo hrs		3.5 helo hrs	2.5 helo hrs
Projected Activities for 23 May-29 May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 23 May-29 May	Raritan Bay and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May		NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Comments on Actual Activities for 23 May-29 May	harbor flight limited by radar in Newark; light algae in bays	brown algae Sandy Hook to LBI	flight cancelled for weather	NSS		NSS; dredging in Great Egg and Townsends Inlets	NSS
	1.6 helo hrs	4.3 helo hrs		1.8 helo hrs		3.1 helo hrs	1.9 helo hrs

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 30 May-5 June	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 30 May-5 June	NY Harbor and Sandy Hook to IBSP	flight cancelled for weather	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	flight cancelled for weather
Comments on Actual Activities for 30 May-5 June	red,brown algae in Raritan Bay, dispersed debris from Sandy Hook to Manasquan 2.4 helo hrs		debris in Arthur Kill, Army Corps in Narrows, debris line off Sandy Hook 1.9 helo hrs	full moon debris in Narrows, in ocean surf, and high tide lines 1.7 helo hrs		NSS; debris along Brooklyn seawall 3.3 helo hrs	
Projected Activities for 6 June-12 June	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 6 June-12 June	flight cancelled for weather	fog limited flight to Raritan Bay & coast	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Comments on Actual Activities for 6 June-12 June		NSS 3.1 helo hrs	stormwater debris in harbor and Pt Pleasant 1.8 helo hrs	NSS 2.2 helo hrs		NSS 3.0 helo hrs	NSS, debris on Sandy Hook & Mantoloking 2.0 helo hrs

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 13 June-19 June	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 13 June-19 June	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	Ocean City to IBSP		NY Harbor and Sandy Hook to Cape May	flight cancelled for weather
Comments on Actual Activities for 13 June-19 June	NSS; brown algae in Raritan Bay	debris along Brooklyn w. ll from Red Hook to Verrazano, algae off Sandy Hook ocean side	new moon debris in harbor and Sandy Hook	helo down; plane flight to observe oil slick from barge at Ocean City; plume 100 yards offshore		fish kills in Raritan River & Newark Bay, reported to EPA and FG&W	
	2.2 helo hrs	3.1 helo hrs	2.0 helo hrs	2.9 Cessna hrs		3.6 helo hrs	
Projected Activities for 20 June-26 June	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 20 June-26 June	flight cancelled for weather	NY Harbor and Sandy Hook to Holgate	NY Harbor and Sandy Hook to Shark River	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Comments on Actual Activities for 20 June-26 June		NSS	NSS	NSS		NSS	NSS
		2.3 helo hrs	2.0 helo hrs	1.8 helo hrs		3.3 helo hrs	2.0 helo hrs

New Jersey Department of Environmental Protection and Energy
Sur ·eillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 27 June-3 July	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 27 June-3 July	NY Harbor and Sandy Hook to IBSP	Raritan Bay and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	Raritan Bay and Sandy Hook to IBSP		abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to IBSP
Comments on Actual Activities for 27 June-3 July	NSS	algae off Deal and Long Branch	NSS	NSS			NSS
	1.5 helo hrs	3 2 helo hrs	2.1 helo hrs	2.1 helo hrs			2.2 helo hrs
Projected Activities for 4 July-10 July	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 4 July-10 July	abbreviated schedule; flight cancelled	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to Atlantic City	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	abbreviated schedule; flight cancelled
Comments on Actual Activities for 4 July-10 July			NSS	NSS		NSS	
			3.1 helo hrs	2 1 helo hrs		3.4 helo hrs	

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 11 July-17 July	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 11 July-17 July	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to IBSP		flight cancelled for helo check	abbreviated schedule, flight cancelled
Comments on Actual Activities for 11 July-17 July		NSS		NSS			
		2.4 helo hrs		2.8 helo hrs			
Projected Activities for 18 July-24 July	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 18 July-24 July	abbreviated schedule; flight cancelled	flight cancelled for helo check	abbreviated schedule; flight cancelled	flight cancelled for helo check		flight cancelled for weather	abbreviated schedule; flight cancelled
Comments on Actual Activities for 18 July-24 July							

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 25 July-31 July	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 25 July-31 July	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to Atlantic City	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Brigantine	abbreviated schedule; flight cancelled
Comments on Actual Activities for 25 July-31 July		NSS 3.7 helo hrs		NSS 2.9 helo hrs		algae off Sandy Hook & Deal; debris in Narrows & Kill Van Kull 2.4 Cessna hrs	
Projected Activities for 1 Aug-7 Aug	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 1 Aug-7 Aug	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to Cape May	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to IBSP		NY Harbor and Sandy Hook to Cape May	abbreviated schedule, flight cancelled
Comments on Actual Activities for 1 Aug-7 Aug		NSS 3.5 helo hrs		NSS 1.8 helo hrs		brown algae off Atlantic City, notified ACHD; 2.9 helo hrs	

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 8 Aug-14 Aug	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 8 Aug-14 Aug	abbreviated schedule; flight cancelled	flight cancelled for weather	abbreviated schedule, flight cancelled	flight cancelled for weather		NY Harbor and Sandy Hook to Cape May	abbreviated schedule; flight cancelled
Comments on Actual Activities for 8 Aug-14 Aug						discharge from dock in Raritan Bay NJSP notified; debris off Long Branch 3.2 Cessna hrs	
Projected Activities for 15 Aug-21 Aug	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 15 Aug-21 Aug	abbreviated schedule; flight cancelled	flight cancelled for weather	abbreviated schedule; flight cancelled	flight cancelled for weather		NY Harbor and Sandy Hook to IBSP	abbreviated schedule; flight cancelled
Comments on Actual Activities for 15 Aug-21 Aug						brown algae Sandy Hook to Long Branch 2.4 helo hrs	

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Projected Activities for 22 Aug-28 Aug	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 22 Aug-28 Aug	abbreviated schedule; flight cancelled	NY Harbor and Sandy Hook to Cape May	revised schedule; flight cancelled	NY Harbor and Sandy Hook to LBI		flight cancelled for weather	NY Harbor and Sandy Hook to IBSP
Comments on Actual Activities for 22 Aug-28 Aug		debris off Long Branch to Monmouth Bch; 4-5 miles long 3.2 helo hrs		notified Criminal Justice of discharge from Raritan River property 2.2 helo hrs			dispersed debris in Sandy Hook-Rockaway transect 1.8 Cessna hrs
Projected Activities for 29 Aug-4 Sept	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 29 Aug-4 Sept	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP	NY Harbor and Sandy Hook to IBSP		flight cancelled for weather	
Comments on Actual Activities for 29 Aug-4 Sept	NSS 1.9 helo hrs	NSS 3.1 helo hrs	NSS 2.1 helo hrs	TOSA discharge observed & reported to Enf 1.6 helo hrs			brown algae Asbury Park to Pt Pleasant 1.7 helo hrs

New Jersey Department of Environmental Protection and Energy
Surveillance Flight Schedule
1992

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
~~Projected Activities~~ for 5 Sept-11 Sept	~~NY Harbor and~~ Sandy Hook to IBSP	~~NY Harbor and~~ Sandy Hook to Cape May	~~NY Harbor and~~ Sandy Hook to IBSP	~~NY Harbor and~~ Sandy Hook to IBSP	USEPA Substitute Flight	NY Harbor and Sandy Hook to Cape May	NY Harbor and Sandy Hook to IBSP
Actual Activities for 5 Sept-11 Sept	flight cancelled for weather	NY Harbor and Sandy Hook to Cape May	flight cancelled for weather	flight cancelled for weather		flight cancelled for weather	flight cancelled for weather
Comments on Actual Activities for 5 Sept-11 Sept		NSS 3.0 helo hrs					

WRITTEN TESTIMONY SUBMITTED BY THE
CALIFORNIA DEPARTMENT OF HEALTH SERVICES
BEFORE THE JOINT HEARING OF THE HOUSE COMMITTEE
ON MERCHANT MARINE AND FISHERIES SUBCOMMITTEE
ON OCEANOGRAPHY, GULF OF MEXICO AND THE OUTER
CONTINENTAL SHELF AND THE SUBCOMMITTEE ON
ENVIRONMENTAL AND NATURAL RESOURCES
WASHINGTON, D.C.
JULY 15, 1993

The California Department of Health Services appreciates the opportunity to comment on the Beaches Environmental Assessment, Closure, and Health Act of 1993 (H.R. 31). The Department of Health Services is generally responsible for determining the appropriate water quality standards needed to protect public health even though those standards may be enforced by another agency. Recreational standards for coastal waters, for example, have been adopted by the Department of Health Services but are enforced by the State and Regional Water Quality Control Boards and local health departments.

California is obviously very concerned with maintaining the safety of the State's coastal waters since we have more than 800 miles of coastline and over 30 million people who may at one time or another utilize those coastal waters. Coastal recreation, particularly in Southern California, is an important activity for many Californian's as well as a significant attraction to the millions of tourists who visit the State.

Due to our concern over saltwater body-contact recreation, California adopted bacterial standards for such waters in the

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1950s. This standard is based on a maximum total coliform concentration. When this level is exceeded, beaches are either posted or closed. Although the standard was not developed using modern health risk techniques, it has proven to be very useful in assessing and maintaining a safe and sanitary condition in our coastal waters.

The primary problems we face with respect to unsafe bacterial quality in saltwater recreational areas stem from accidental releases of inadequately treated wastewater as a result of sewer line or outfall breaks, urban and storm water runoff, and from the discharge of untreated or inadequately treated wastewater from outside of the United States. For example, several times each year, popular bathing beaches in Southern California have had to be closed for various periods of time due to the northward flow of untreated wastewater discharged by the City of Tijuana into the ocean or the Tijuana River.

We are in full agreement that a need exists to fully evaluate the health risk associated with coastal water recreation and the need to develop methods to effectively monitor the quality of our ocean waters. We are pleased that HR 31 contains language that would require EPA to evaluate the risks associated with different pathogenic organisms, their fate in the marine environment, and the potential use of indicator organisms that could effectively and inexpensively be used for monitoring purposes. Considerable research into the health risks associated with ingestion of certain chemicals has been conducted, but little knowledge is

available of the risks incurred by surfers riding their surfboards, or persons wading or swimming near wastewater ocean outfalls, points of urban or storm water runoff or marinas with sewage holding tanks.

While we are concerned about the increasing number of federally mandated standards imposed on the states, we can appreciate the need for having consistent minimum health standards among various states. Coastal currents, as we know, do not recognize state, or even national, boundaries. Our current frustrations with the wastewater problems that affect our southern border are a good example of that. We do not believe that federal criteria for coastal recreational waters would present any significant problems for California. We recommend, however, that when establishing these standards attention be paid to the regional differences in the physical and chemical conditions of different coastal waters. Conditions such as temperature, depth and salinity can vary significantly between West Coast and East Coast or Gulf Coast waters. Therefore, standards that are developed based on East Coast conditions may not provide adequate protection in West Coast waters .

We are concerned, however, over the impact of federally mandated monitoring requirements. Our concerns relate to flexibility and overall costs. Given the numerous variables associated with bacterial monitoring in ocean waters which necessitate custom designed monitoring programs to be effective, it is difficult to envision a monitoring program designed at the federal level that

will fit all conditions. Therefore, a considerable amount of state flexibility would seem to be essential.

Attempting to estimate the costs associated with implementing this program is difficult without knowing the type of monitoring that will be required. Many factors including the frequency, whether virus monitoring is included, number of locations needed to be sampled, etc., would significantly affect the cost of the program. Even using minimal frequencies, no virus monitoring, and using selected locations would cost California in excess of $1 million per year. This cost would fall primarily on California counties which conduct most of the bathing water monitoring and carry out the necessary posting and closure of beaches. This presents concerns since the bill only calls for federal funding up to a maximum of 50% of the program cost. Due to budgetary problems, California has had to reduce many of its routine water quality monitoring programs. We would like to see the U.S. Environmental Protection Agency work closely with the affected states to carry out an accurate cost assessment of the proposed regulations and requirements before these are mandated upon the states.

While California has not conducted any studies or recent surveys with respect to recreational health effects in marine waters, we would be interested in providing input to the study to be conducted by EPA should this bill become law.

WRITTEN TESTIMONY ON HR 31
SUBMITTED BY THE
CALIFORNIA WATER RESOURCES CONTROL BOARD
BEFORE THE JOINT HEARING OF THE
HOUSE COMMITTEE ON MERCHANT MARINE
AND FISHERIES SUBCOMMITTEE ON OCEANOGRAPHY,
GULF OF MEXICO AND THE OUTER CONTINENTAL SHELF
AND THE SUBCOMMITTEE ON
ENVIRONMENT AND NATURAL RESOURCES
WASHINGTON, DC
JULY 15, 1993

BACKGROUND

There is no other state in this nation with as extensive a coastline coupled with a population as dense as that of California.

Even without considering the millions of out-of-state and international visitors who visit its shores annually, some 80 percent of California's 31.5 million residents live within a 30-minute drive of its 1,118 coastline. Eight million people live near Santa Monica Bay alone and because so many live in such close proximity, the coast's attraction as a valuable natural resource is continually threatened.

The public agency with primary responsibility for protecting this resource is the State Water Resources Control Board, a five-member Board appointed by the Governor to protect California's water quality and to allocate rights to surface water use. In protecting the state's waters, the State Water Board works with nine Regional Water Quality Control Boards located in each of the State's major watersheds. These Regions are charged with maintaining the quality of their Region's water bodies. Six of the nine Regional Water Boards are located along California's coastline.

The state's primary mechanism for protecting coastal waters from unauthorized discharges is the State Water Board's 1972 Ocean Plan which is reviewed every three years to facilitate inclusion of additional protective amendments. In 1990 amendments were approved which, for the first time, set objectives for dioxin, tributyltin, endosulfan and selenium in coastal waters with modified objectives for cyanide and chlorine. To better protect those participating in coastal water-contact recreation, new bacterial assessment requirements designed to identify contamination sources were also adopted.

The current Ocean Plan triennial review focuses on 22 high priority issues. Among these are several related to contamination by pathogenic organisms: (1) further examination of the adequacy of three bacterial indicator groups (total coliform, fecal coliform and enterococcus) for protection of water-contact recreation; (2) extension of existing boundaries of the water-contact zone; and (3) determination if stricter standards are needed to protect human health in shellfish harvesting waters.

The State Water Resources Control Board welcomes this opportunity to provide testimony on HR 31. We applaud the efforts of Congressmembers Hughes, Saxton, Gallo, Payne, Pallone, Roukema and Hochbrueckner in proposing legislation to improve the quality of this nation's coastal recreation waters while making more directly accountable those charged with protecting this fragile resource. While there have been extensive studies relating to chemical pollution over past years, microbiological issues have been somewhat neglected nationally. Congressional interest in microbiological issues as reflected in HR 31 should be supported.

CONCERNS WITH HR 31

A Nationwide Standard

While we agree with the intent of HR 31, we must voice our concern at the proposed language recommending that nationwide water quality criteria for pathogens in coastal recreation waters be created. First, HR 31 states that EPA must adopt "water quality criteria for pathogens in coastal recreation waters". California does not have criteria or standards for pathogens per se, but for indicator organisms (total coliform, fecal coliform, and enterococcus). Another concern is based on the fact that physical conditions on the west coast are very different from east and Gulf Coast waters. For example, temperature, depth, and salinity regimes differ. What may be protective of east coast waters may not be useful on the west coast. The choice of a nationwide indicator organism for water contact bacterial standards brings debate.

Since 1972, the California Ocean Plan has required that waste discharged to the ocean be monitored for total and fecal coliform, the indicator organisms historically used to examine water for its potential to contain pathogenic organisms. However, research conducted over the last 20 years has indicated that total and fecal coliform bacteria may not be adequate indicators of some water-borne pathogens such as viruses.

In 1986 EPA recommended that states adopt an enterococcus standard for marine waters based on epidemiological studies conducted in east coast waters between 1972 and 1978. These studies provide the first and only correlation of the incidence of illness with concentrations of indicator organisms in marine waters. It is our concern that the correlations developed in the EPA studies may not be applicable to the colder, deeper waters of California's coast. The environmental fate of a specified indicator organism may, for example, vary widely between Cape Cod and Santa Monica Bay.

Because of the controversy surrounding the adoption of the enterococcus standard, an additional provision was added to the California Ocean Plan in 1990 requiring dischargers, upon renewal of their permits, to monitor for enterococcus bacterial at all sites where total and fecal coliform sampling is conducted. The intent of this requirement was to determine if a correlation exists between levels of various indicator organisms and sources of sewage discharges.

HR 31 Brings Additional Costs to States

Although HR 31 does not specify which organism would be used for water quality criteria for pathogens, this discussion assumes that EPA would select enterococcus as the indicator organism of choice and if enterococcus is so designated, California laboratories would then be required to change current procedures. Such changes would result in increased costs to industry and local governments required to provide monitoring data to the state.

As an example, the City of San Diego which under the 1990 Ocean Plan has been required by the San Diego Regional Water Quality Control Board in its NPDES permit to monitor for enterococcus bacteria at all sites where total and fecal coliform sampling is conducted, has estimated its added monitoring bills at approximately $250,000 per year.

CURRENT STATE WATER BOARD EFFORTS TO PROTECT COASTAL WATERS

Marine Microbiological Indicator Monitoring Assessment Study Underway

The State Water Board recently signed a contract with the University of California, Berkeley, to analyze bacterial monitoring data collected since 1990 and to determine if, based on this data, an indicator organism can be identified which is best suited to protect California's ocean water quality and public health. If a decision cannot be reached based on existing data, recommendations will be made outlining:

1. research needed to determine the most appropriate indicator organism for California's ocean waters, and
2. suggested Ocean Plan wording which states the limitations of the current indicator organisms.

To accomplish this goal, the State Water Board has convened an independent technical group, the Microbiological Advisory Committee comprised of representatives from the University of California, municipal wastewater treatment laboratories and State scientists to advise State Water Board staff on the research design for work to be performed. This committee will meet on an ad hoc basis to advise and guide the project manager and the University and to assess work being performed.

Bay Protection and Toxic Cleanup Program

California continues to strengthen its coastal waters protection efforts with the Bay Protection and Toxic Cleanup Program established by the State Legislature

in 1989. This legislation authorized the State Water Board to collect up to $4 million annually in fees from dischargers to bays, estuaries and the ocean to fund activities of the program.

Program goals are to: (1) protect existing and future beneficial uses of bay/estuarine waters; (2) identify and characterize toxic hot spots in sediment; (3) plan for prevention of further pollution and the remediation of existing hot spots; and (4) develop and maintain a comprehensive information source to provide for future assessment and regulatory efforts, accessible public information and to facilitate management decisions.

Among its list of accomplishments over the past three years has been a workshop to develop sediment quality objectives - the first effort of this type in the nation. A workplan was then adopted to proceed with these objectives.

Although the original legislation called for the program to sunset in January, 1994, proposed legislation would extend the program for another five years. Included in the proposal is an epidemiological study to determine adverse health effects from urban runoff at coastal beaches.

Annual Beach Posting and Closure Report

In compliance with 1992 legislation, the State Water Board will publish an annual report on beach postings and closures in California beginning in September 1994. The report will contain data submitted by county health officials relating to location, duration, and suspected reasons for the postings and closures, and will be helpful in establishing uniform statewide criteria for posting or closing beaches for the purpose of protecting the health of the public. In addition, the bill also required local health officers, at a minimum, to place signs on beaches warning the public of health risks when bacteriological levels are exceeded.

Summary

We support the type of research that HR 31 would initiate, but caution that a single, nationwide standard may not be appropriate. These standards may need to be set on a regional basis.

TO: Members, Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf
Members, Subcommittee on Environment and Natural Resources

FROM: Subcommittee Staff

RE: Hearing on the Beaches Environmental Assessment, Closure, and Health Act, H.R. 31

The Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf and the Subcommittee on Environment and Natural Resources will hold a hearing on H.R. 31, the Beaches Environmental Assessment, Closure, and Health Act of 1993 (BEACH Act), on July 15, 1993, at 2:00 p.m. in room 1334 of the Longworth House Office Building.

The hearing will review recommendations on the BEACH Act, introduced on January 5, 1993, by Congressman William J. Hughes. Witnesses will include representatives of the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the National Resources Defense Council (NRDC), the Center for Marine Conservation (CMC), the Texas General Land Office, and the New Jersey Department of Environmental Protection and Energy.

BACKGROUND

H.R. 31 is the successor to bills introduced in the two previous Congresses (H.R. 4333 in the 101st, H.R. 12 in the 102nd). Both bills passed the House, but were not considered by the Senate. H.R. 31 is identical to the House passed version of H.R. 12, which includes compromise language to allow for selective exclusion from the monitoring requirements of discrete coastal recreational areas. A companion bill (S. 997) has been introduced in the Senate by Mr. Lautenberg.

BILL SUMMARY

The BEACH Act requires the EPA to revise water quality criteria and to establish uniform standards for states to test the quality of coastal recreational waters, particularly for human pathogens and viruses. States would have three years to adopt the revised criteria. In addition to revising water quality standards, EPA would be required to publish regulations specifying monitoring requirements which would specify the frequency of monitoring based on the proximity to pollution sources, and the period and extent of use of recreational waters. Based on revised standards, states would be required to post signs on beaches to inform the public when beach waters pose potential health risks. Conditions under which discrete areas of coast may be exempted from monitoring are required to be specified. The bill also calls for EPA and NOAA to conduct a study to develop better indicators for human pathogens in coastal recreation waters and to assist in the revision of water quality standards.

In addition, the bill would require EPA to publish regulations on uniform assessment and monitoring procedures for floatable materials in coastal recreational waters. Designed to eliminate the public health hazards of floatable medical wastes and other contaminated debris, the bill proposes that technical assistance be provided to local authorities from coastal zone management agencies, particularly with respect to non-point sources of pollution. Funds could be used under Coastal Zone Management Act grants for floatable clean up.

The bill authorizes $3 million for 1994 and 1995 for EPA to make grants to states to assist in establishing water quality standards and for implementing water quality monitoring programs. $1 million is authorized for EPA to carry out the other provisions of the bill.

HISTORICAL BACKGROUND

Early efforts to develop water quality guidance for coastal and estuarine waters were directed toward developing criteria for infectious diseases resulting from contamination of waters with pathogens (bacteria and viruses present in human sewage and animal wastes). More recently, concerns about floatable wastes (material and debris that may float or remain suspended in the water column such as plastic materials, aluminum cans and wood) on beaches and shorelines, and related concerns associated with medical wastes, have come to the attention of the public.

While bathing beaches serve as a major source of recreation throughout the United States, they also have the potential for disease transmission via water contact and/or ingestion. A number of illnesses may result from disease-causing organisms found in contaminated coastal waters, for example intestinal disorders, hepatitis, skin rashes and eye infections. Although extremely rare, waterborne pathogens (e.g. those associated with leptospirosis) may cause death when ingested.

Beach closures resulting from garbage washups and high bacterial counts in the mid-Atlantic region during 1987 and 1988 elevated this

issue to the attention of the nation. Recreational tourism suffered as a result. Estimates of economic losses to the recreational tourism industries in New York and New Jersey for the two-year period from 1987 to 1988 exceeded $4 billion.

PATHOGENS

Sources of pathogens and material carrying pathogens impacting coastal beaches may include sewage and industrial discharges, solid waste disposal, storm water run-off, bird and animal populations, dry weather inflow from urban areas, and agricultural drainage. Untreated sewage and other disease-carrying debris from land-based sources in coastal waters pose two distinct problems. The presence of bacteria and other micro-organisms may cause a number of ailments, such as gastroenteritis, salmonellosis, shigellosis, cholera, infectious hepatitis, and leptospirosis. State and local health officials close beaches when levels of bacterial indicators exceed the health standard.

Another problem arises when nutrients in the water act as fertilizers, stimulating rapid algae growth or algal blooms. Certain algal blooms may become a public health problem if the algae contain toxins which are poisonous to humans when ingested. Red tide algae (caused by a group of algae called dinoflagellates) such as those which occurred off the coast of North Carolina during the summer of 1988 are examples of toxic algae which have posed health risks.

EPA Field Criteria For Pathogens

EPA criteria for recreational water testing pursuant to the Clean Water Act is a non-regulatory, (that is, no force of law until adopted by states as part of their water quality standards) scientific assessment of ecological and public health effects. The federal criteria for pathogens are developed as guidance to the states and is intended to be used to form the basis for enforceable state water quality standards. There are separate criteria for freshwater, saltwater, and shellfish harvesting waters. A state is not currently required to adopt the pathogen criteria as part of its water quality standards.

In 1986, EPA revised its recreational water criteria, pursuant to section 304(a)(1) of the Clean Water Act, recommending a new microbial indicator called enterococci to replace earlier indicators, fecal coliform and total coliform. EPA, in issuing the new guidance, concluded that enterococci has a better correlation with swimming-associated gastrointestinal illness in marine water than fecal coliform.

The frequency of testing recommended in the current EPA criteria is based on a minimum of five samples taken over a 30 day period. The criteria also recommend several classes of beaches based on the following use levels: frequent, moderate, occasional, and infrequent. The Federal criteria also provided specific bacteria densities that should not be exceeded based on frequency of use, established a level of 19 illnesses (gastroenteritis) per 1,000 swimmers as an acceptable health risk in salt water.

Many of the coastal states have not adopted the 1986 EPA criteria, and continue to use EPA's earlier guidance. Approximately 21 coastal and Great Lakes states still use fecal coliform, two states (California and Massachusetts) use fecal coliform and total coliform, and three states (Maine, Delaware, and Hawaii) use enterococci for testing recreational waters.

1993 NRDC Beach Closings Report

On June 30, 1993 the Natural Resources Defense Council (NRDC) released it's third annual report on beach closings in the U.S. This report provides data on ocean and bay beach closings and advisories for 1992 for 22 coastal states. For the first time, this report also contains national data on beach attendance, the costs of beach monitoring, and the income generated from beach tourism. Among the findings of the NRDC report are:

- In 1992 there were more than 2,600 instances of beaches being closed or advisories posted.

- High levels of bacteria were responsible for the majority of the closings.

- There were more than 160 million visitors to U.S. beaches in 1992, generating billions of dollars for local economies.

Selected portions of the NRDC report are included as Appendix 1.

FLOATABLES

Floatables in the marine environment come from several sources, notably combined sewer overflows, migration from inland estuaries, runoff from upland landfills, illegal dumping from commercial and recreational vessels, and ocean disposal of wood piers. EPA, in conjunction with the Center for Marine Conservation, sponsor annual nationwide beach cleanups. EPA is also initiating the development of a guidance document for determining beach closures due to beach debris or medical wastes.

CMC Annual Beach Cleanup Report

The Center for Marine Conservation (CMC) has organized beach cleanups since 1986. These events have grown to international stature involving over 145,000 volunteers in 35 states and 12 foreign countries. In addition to clearing beaches of marine debris, the cleanups provide valuable data on the quantity and types of debris which pollute the ocean. Each year CMC publishes a report on the findings of its volunteers, outlining trends in marine debris amount, distribution, content. Some important findings of the most recent report (1991) were:

- Over 4,315 miles of U.S. beaches were cleaned, netting 2.9 million pounds of marine debris equaling more than 650 pounds/mile. This was down from 715 pounds/mile in 1990. Overall, 5.2 million items were collected in 1991.

- The majority of the wastes (by weight) were plastics (59%). The proportion of plastics show a minor decrease from 64.5% in 1988.

- Cigarette butts were the most common item collected (almost 1 million) and represented 18% of all debris.

Status of EPA Regulatory Activities

In response to rising concerns over beach safety, EPA has proposed to negotiate a rule on bathing beach water standards. To address this issue, EPA contracted RESOLVE to examine the feasibility of a negotiated rulemaking or other appropriate consensus building process. In June, 1993, a convening report on a proposed regulatory negotiation was presented to EPA. This report made several findings: 1) most interested parties would prefer a negotiated approach if new recreational water regulations are needed; 2) most stakeholders generally think that reevaluation of recreational criteria is inevitable; and 3) there are concerns about the lack of an adequate scientific database for new rulemaking efforts. As a result of this report, EPA has made a preliminary decision to do a Phase II (Facilitation) negotiated rulemaking in fiscal year 1994, pending the availability of funds.

ISSUES

Are current EPA water quality criteria sufficient to protect the health of beach users? Are improved criteria technically and economically feasible?

To what extent are the states using the existing EPA criteria?

Do existing testing techniques adequately reflect public health risks? Are better techniques available?

Is there a need for uniform federal standards for beach monitoring, posting and closure?

Should all states, regardless of beach conditions, use levels, and exposure to pollutants be required to participate in a national program?

Will EPA implement a national program, even if H.R. 31 is not enacted?

What will be the costs to the states of a national monitoring program? How does this cost relate to current expenditures for beach monitoring? Who will pay the additional costs?

Attachment

TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

July 6, 1993

The Honorable Solomon P. Ortiz
U.S. House of Representatives
Committee of Merchant Marine and Fisheries
Washington, D.C. 20515-6230

Re: Proposed H.R. 31 - Beaches Environmental Assessment, Closure and Health Act of 1993

Dear Representative Ortiz:

We appreciate the opportunity to provide comment on the proposed Beaches Environmental Assessment, Closure, and Health Act of 1993 (H.R. 31). Efforts to protect the health and well-being of all people utilizing our coastal resources merit the support by every federal, state and local entity which has primary responsibility for our nation's coastal waters. Although the State of Texas agrees in concept with the subject bill's goals of protecting public safety and improved environmental quality of coastal recreation waters, we must be somewhat restrained with our endorsement due to concerns about the required adoption of new criteria for indicator bacteria, the level of effort that will be necessary to implement standardized water quality monitoring, and the funding sources that will be necessary should the bill be enacted.

The physical nature of the Texas coast is somewhat unique in the fact that much of the mainland coast is protected by barrier islands. The Texas barrier island system stretches from Galveston Bay to the Texas-Mexico border. There are approximately 370 miles of linear coastline along the Gulf of Mexico. In addition, there are seven major and three minor estuarine systems, and an estimated 1.5 million acres of open water bays. Bay shoreline is estimated to be 2,200 miles.

Of the 370 miles of open Gulf shoreline in Texas, 367 miles are classified as beach. Under the Texas Open Beaches Act, 293 miles are open for public use. Of these, 173 miles are considered easily accessible; that is, accessible by driving along the shore or by walking no more than one mile from a point that can be reached by a two-wheel-drive vehicle. Since the Act applies only to state-owned beaches bordering on the seaward shore of the Gulf, some 2,200 miles of bay shoreline are not afforded the same free and unrestricted access to the public. However, many recreational activities continue to take place along a significant portion of this shoreline.

Section 3 of the proposed legislation requires for states to adopt criteria for new Environmental Protection Agency (EPA) indicator bacteria, which would change the State of Texas standard from fecal coliform to Enterococcus (E. coli). We anticipate evaluating these new criteria over the next few years to weigh the benefits of such a conversion. Our concerns center around the

short time frame proposed by the legislation for state adoption of new criteria. Specifically, our concerns are that (1) this would move our state away from an accepted bacteria indicator for which we have collected data for 30 years; (2) we do not yet have much data on natural concentrations of the new indicators in Texas waters; and (3) the new indicators do not apply to oyster protection, which would require us to monitor and assess compliance for oyster waters using fecal coliform, in addition to monitoring the new indicators to protect contact recreation.

The definition for "coastal recreation waters" contained in Section 3(a)(9)(B) is somewhat vague and would benefit by including additional detail. Specific activities should be listed that are intended to be covered by the phrase "primary contact purposes".

Section 4, entitled Coastal Beach Water Quality Monitoring indicates that states must comply with recreational beach monitoring requirements to be published by EPA. It is not possible to estimate the level of effort this would require, because the guidelines for monitoring identified in this Section address only frequency and not the geographic coverage. With states such as Texas that have long stretches of open beaches, the level of effort could be extensive.

A solution to the above problem could be the inclusion of a provision for exemptions should certain stretches of shoreline, whether Gulf or bay shoreline, not meet criteria for minimum use for designated recreational activities. Past experience with many areas of the Texas coast have found few significant problems related to the health and safety of recreationists. Without an exemption clause, the success of a coastal recreational waters monitoring program would hinge on either increased resources within the Texas Water Commission or action by the state legislature to establish clear authority to require local authorities to perform the monitoring activities. Local entities may now conduct limited monitoring of recreational waters along the coast; however, because of the lack of specificity in the proposed bill, it is difficult, if not impossible to estimate the impact to their programs.

Sections 7 and 9 address the potential for state grants and appropriations to develop the monitoring program, yet the funds to be shared by eligible states is very limited. The program will require a significant financial commitment by the state to implement. Because of the vast expanse of Gulf and bay shoreline and the general nature of the proposed legislation, it is impossible for the TWC to estimate the required effort and financial support necessary to implement such a program.

In summary, the basic concept of evaluating and monitoring coastal recreational waters is a positive step towards protecting the health of millions of people who utilize our beaches. But we need a better handle on the scope of the legislation and what the potential cost will be for each of the coastal states. Just as federal programs are looking for

opportunities to save money and streamline operations, many states, including Texas, are faced with the same dilemma.

We are encouraged by the efforts of the Congress to address the health and welfare of the people relative to coastal waters and will support efforts to develop a program which can be implemented by states with a reasonable chance of success.

The above comments are provided for your information and may be submitted to the Subcommittee on Oceanography, Gulf of Mexico and the Outer Continental Shelf, and the Subcommittee on Environment and Natural Resources, as part of the official record for the hearing scheduled for July 15, 1993. Should it be necessary to provide a resource witness for the hearing, we will work with your staff to make the arrangements. Please contact Mr. Bruce Moulton, Water Policy Division, at (512) 463-8208 if you have questions or require additional information concerning our comments.

Sincerely,

Anthony Grigsby
Executive Director
Texas Water Commission

AG/BM/ag

August 19, 1993

The Honorable Solomon P. Ortiz
Chairman
Subcommittee on Oceanography, Gulf of Mexico,
and the Outer Continental Shelf
U. S. House of Representatives
Room 1334, Longworth House Office Building
Washington, D.C. 20515-6230

Dear Representative Ortiz:

I am providing under cover of this letter responses to the five specific questions which you posed about my July 15 testimony on the Beaches Environmental Assessment, Closure, and Health Act of 1993 (H.R. 31).

As you know, the nation's beaches differ substantially one from another. The beaches on our barrier islands, washed by the warm waters of the shallow Gulf of Mexico, are worlds away from the beaches washed by the mid-Atlantic, for instance. Actions appropriate to our long stretches of seldom used beach would be insufficient on crowded recreational beaches.

I trust that the Committee will keep in mind the great variety of beaches which would be affected by this proposed legislation. Thank you again for permitting me to testify.

Sincerely,

Garry Mauro
Texas Land Commissioner

GM/jh

Enclosure

Garry Mauro
Commissioner
General Land Office

Stephen F. Austin Building
1700 North Congress Avenue
Austin, Texas 78701
(512) 463-5256

Garry Mauro - Texas General Land Office:

1) Can you provide any estimate of what it would cost to implement a National monitoring program as described by the bill?

(If not:) Wouldn't it be prudent to develop a cost estimate before we move forward?

2) Many beaches in the U.S. are privately owned or are National Seashores or other federally owned lands. Who would be responsible for testing these areas?

3) It is thought that fecally derived infections may be responsible for less than half of the total number of infections from swimming at bathing beaches. However, existing criteria are solely focussed on fecal indicators. How should new criteria reflect this situation?

4) Should states be able to use a single standard to test for both beach water quality and shellfish water monitoring?

5) Do you feel that implementing this legislation would require you to pull resources from other, higher priority, public health programs and issues?

1. Without knowing the nature and frequency of monitoring activities which might be prescribed by the Administrator, it is not possible for me to estimate the costs of this program. I am sure Congress will prudently review the potential for costs before moving forward with this legislation.

2. I can only address the issue of privately and federally owned beaches as they would be impacted in Texas. The public in Texas has a traditional easement over all beaches which are accessible. This means that state and local governments have long exercised responsibilities on these privately owned beaches and would comply with the monitoring requirements without burdening the private owners.

In the case of Federally owned beaches, which are extensive in Texas, I would expect the relevant Federal agencies to conduct the monitoring program as a part of their recreation management program. It is possible that Federal agencies would utilize water quality standards and monitoring frequencies promulgated by the Administrator, if the standards adopted by the State were more stringent. This matter should be clarified if it is the intent of this legislation to present the public with clear and consistent information.

3. I have requested our Texas Water Commission to comment on this question. I am advised that the issue is complicated by the cost and duration of the tests available as well as their relevance to human health protection. The Water Commission's responses will be forwarded to you as quickly as I receive them.

4. Again I have called on the Texas Water Commission and the Texas Department of Health for a response. Let me observe that in Texas our shellfish harvesting is almost exclusively in the bays whereas our water contact recreation is very largely on the Gulf beaches. Therefore we expect no significant cost saving from adopting a single standard. This legislation would require substantial new monitoring.

5. If monitoring in Texas were limited to beaches where a significant number of people really get in the water and are exposed to its potential risk, I don't think the cost would prove to be so great since we are already out there monitoring water around oyster beds, for instance.

Suppose on the other hand that I am wrong and the cost is great -- seemingly prohibitive, then it is a question of trade offs, pulling money from other activities. That is where we would be at a loss as policy makers. At this point there is simply no scheme of public priorities for the Gulf. That is why the efforts of EPA's Gulf of Mexico Program to create a Gulf plan were so welcome to those of us who have to make trade offs on what is important. That is why I believe that there is a need to have a multi-jurisdictional Gulf Commission to set policies and priorities that can guide us.

American Oceans Campaign • California Diving News • Center for Marine Conservation • Chesapeake Bay Foundation •Coalition for Buzzards Bay • Coalition to Restore Coastal Louisiana • Coast Alliance • Conservation Law Foundation • Dive Boat Calendar and Travel Guide • Dive 'n' Surf • Diving Equipment Manufacturers Association • Divers Involved Voluntarily in Environmental Rehabilitation and Safety • Eastern Surfing Association • Environmental Working Group • Florida Scuba News • Friends of Casco Bay • Galveston Bay Foundation • Long Island Sound Task Force • Long Island Soundkeeper Fund • Manasota 88 • Friends of the Earth •Southern Environmental Law Center • Delaware Riverkeeper Network • Heal the Bay • Inner Frontier • Natural Resources Defense Council • National Association of Underwater Instructors • North Carolina Coastal Federation • Northwest Environmental Advocates • Ocean Futures • Patagonia, Inc. • People for Puget Sound • River Network • Save our Shores • Save San Francisco Bay Association • Save the Bay • Save the Harbor/Save the Bay • Save Wetlands and Bays • Sierra Club • Sport Chalet • Surfrider Foundation, National Chapter • Surfrider Foundation, Humbolt, California Chapter • Surfrider Foundation, Monterey, California Chapter • Surfrider Foundation, San Francisco, California Chapter • Surfrider Foundation, Santa Cruz, California Chapter • Surfrider Foundation, Laguna Beach, California Chapter • Surfrider Foundation, Long Beach, California Chapter • Surfrider Foundation, Newport Beach, California Chapter • Surfrider Foundation, Malibu, California Chapter • Surfrider Foundation, San Diego, California Chapter • Surfrider Foundation, Santa Monica, California Chapter • Surfrider Foundation, Santa Barbara, California Chapter • Surfrider Foundation, Ventura, California Chapter • Surfrider Foundation, Haleiwa, Hawaii Chapter • Surfrider Foundation, Rehoboth Beach, Delaware Chapter • Surfrider Foundation, Tinton Falls, New Jersey Chapter • Surfrider Foundation, St. James, New York Chapter • Surfrider Foundation, Kill Devil Hills, North Carolina Chapter • Surfrider Foundation, Miami, Florida Chapter • Surfrider Foundation, Virginia Beach, Virginia Chapter • Surfrider Foundation, League City, Texas Chapter • Surfrider Foundation, Lake Jackson, Texas Chapter • Surfrider Foundation, Newport, Rhode Island Chapter • US Public Interest Group • Washington Scuba Alliance • Women's Scuba Association •

July 13, 1993

Dear Representative,

The undersigned organizations urge you to co-sponsor and support H.R. 31, the Beaches Environmental Assessment, Closure, and Health Act of 1993. The focus of the B.E.A.C.H bill is to ensure that states have adequate beach testing programs, to protect citizens from health risks, while allowing states flexibility in determining beach closures or in implementing stricter standards.

Current data indicate that the problem of sewage contamination and polluted runoff of our coastal waters, and its associated health risks, are persistent. There have been thousands of ocean and bay beach closings or advisories issued during in the past few years, due to elevated bacteria levels attributable primarily to human and animal waste. Cleaning up existing sources of pollution, including polluted runoff, is clearly the best and the most important remedy to the problem of beach water contamination. In the interim, however, consistent programs to adequately protect beachgoer health must be set in place.

Recent surveys of federal and state practices have shown that:

• current Environmental Protection Agency (EPA) recommended standards allow 19 out of every 1000 swimmers to contract illnesses such as gastroenteritis and even hepatitis;

• States use different standards of varying efficacy to judge the safety of coastal recreational waters;

• many states do little or no monitoring of their beach water despite evidence of local coastal pollution problems as well as heavy beach attendance; and

• government agencies often fail to provide the public with timely notification of

potential health risks even when monitoring shows that standards have been exceeded.

The B.E.A.C.H. bill requires EPA to develop health-based water quality criteria to protect beachgoers and to issue regulations on procedures to monitor coastal recreation waters based on: (1) how frequently a beach is used, (2) proximity of pollution sources, and (3) short term increases of bacteria and viruses resulting from rainfall, malfunctions of wastewater treatment works, or other causes. The States then have 3 years to promulgate their own health-based standards or adopt EPA's minimum criteria. States are also required to post signs on beaches notifying the public of potential health risks when water quality does not comply with State coastal recreation water standards. Additionally, the bill requires EPA to develop guidance on uniform assessment and monitoring of marine debris.

We believe that it is in the best interest of the country to have a comprehensive and effective national program to protect beachgoers from potential health risks of contact with polluted waters. In addition, the economic impacts of polluted beaches must be considered, as tourist spend billions of dollars annually visiting coastal counties and their ocean and bay beaches. The protection of beachgoers through cleanup of polluted waters and effective monitoring is well worth the investment.

By becoming a co-sponsor of this important legislation you would help to install nationally consistent standards, monitoring criteria, and closure notification requirements that would protect beachgoers everywhere while ensuring that no state is at a disadvantage for taking effective action. Thank you for your consideration of this legislation. Please feel free to contact us if we can be of any assistance.

Sincerely yours,

Robert Sulnick
Executive Director
American Oceans Campaign
Santa Monica, California

Dawn M. Martin
Issues Director
American Oceans Campaign
Washington, DC

Fred Felleman
Director of Northwest Office
American Oceans Campaign
Seattle, Washington

Dale Shecker
Editor
California Diving News
Torrance, California

Gary Magnuson
Vice President for Program
Center for Marine Conservation
Washington, DC

Ann Powers
Vice President and General Counsel
Chesapeake Bay Foundation
Annapolis, Maryland

Mimi McConnell
Executive Director
Coalition for Buzzards Bay
Buzzards Bay, Massachusetts

Mark Davis
Executive Director
Coalition to Restore Coastal Louisiana
Baton Rouge, Louisiana

Beth Millemann
Executive Director
Coast Alliance
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Peter Shelley
Senior Attorney
Conservation Law Foundation
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Delaware Riverkeeper
Delaware River Network
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Dive Boat Calendar and
Travel Guide
Huntington Beach, California

Scott Jones
Vice President
Dive 'n' Surf
Redondo Beach, California

Kimberly Woods
President
D.I.V.E.R.S.
Fountain Valley, California

Jim Prusa
Executive Director
Diving Equipment Manufacturers
Association
Hunting Beach, California

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Galveston Bay Foundation
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Adi Lieberman
Executive Director
Heal the Bay
Santa Monica, California

Jeff Bertsch
President
Inner Frontier
Durham, North Carolina

Nancy Seligson
President
Long Island Sound Task Force
Stamford, Connecticut

Terry Backer
Executive Director
Long Island Soundkeeper Fund
East Norwalk, Connecticut

Gloria Rains
Executive Director
Manasota 88
Palmetto, Florida

Sarah Chasis
Senior Attorney
Natural Resources Defense Council
New York, New York

Sam Jackson
Executive Director
National Association of Underwater Instructors
Montclair, California

Todd Miller
Executive Director
North Carolina Coastal Federation
Swansboro, North Carolina

Nina Bell
Executive Director
Northwest Environmental Advocates
Portland, Oregon

Dick Bonin
Executive Director
Ocean Futures
Huntington Beach, California

Kris McDivitt
Chief Executive Officer
Patagonia, Inc.
Ventura, California

Kathy Fletcher
Executive Director
People for Puget Sound
Seattle, Washington

Peter Lavigne
Director of Leadership Program
River Network
Portland, Oregon

Vicki Nichols
Executive Director
Save Our Shores
Santa Cruz, California

Curt Spalding
Executive Director
Save the Bay
Providence, Rhode Island

Beth Nicholson
Chairperson
Save the Harbor/Save the Bay
Boston, Massachusetts

Barry Nelson
Executive Director
Save San Francisco Bay Association
Oakland, California

Matilda Pernell
Executive Director
Save Wetlands and Bays
Millsboro, Delaware

Derb Carter
Attorney
Southern Environmental Law Center
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John C. Bryson
Executive Director

July 15, 1993

The Honorable William J. Hughes
341 Cannon House Office Building
Washington, DC 20515

Congressman Hughes:

The Mid-Atlantic Fishery Management Council reviewed the Beaches Environmental Assessment Closure and Health Act of 1993 (HR 31) at its June 13-15, 1993 meeting, and would like to express its support for the concepts developed in the Act.

Our members agree that clear concise standards which protect the public from health risks while allowing states flexibility in determining beach closure, established criteria useful to beach managers while preventing misinterpretations that could be harmful to the fishing and seafood industries.

Although the Council would defer to others with greater expertise concerning the actual establishment of standards, we recognize anything that improves water quality will have a beneficial impact on fish habitat.

Sincerely,

Lee G. Anderson

Lee G. Anderson
Chairman

Surfrider Foundation

Honorable Chairman Ortiz
Subcommitte on Oceanography, Gulf of Mexico,
Outer Continental Shelf
Washington D.C. 20515-6230

July 8, 1993

Dear Chairman Ortiz,

My name is Dr. Scott A. Jenkins. I have been a researcher in Coastal Processes at the Scripps Institution of Oceanography since 1980. I have also served as the Environmental Director of the Surfrider Foundation since 1990. I have conceived and implemented the first all volunteer surfzone water quality monitoring program called "The Blue Water Task Force".

Based upon this experience and background, I report to you that there is no existing water quality data which implicates the discharge of primary treated sewage with beach closures when the effluent is discharged through a properly functioning ocean outfall. Instead, more than 2,000 beach closures anually are attributable to untreated urban runoff and raw sewage from leaking sewer infrastructure. Most of this kind of non-point source pollution is discharged directly on to the beach through storm drains, who's seemingly benign flow attract young children. Furthermore storm drain discharges are diluted relatively slowly in the surfzone due to the shallow water depth and shoreward directed wave energy, which keeps this pollution pinned against the shoreline.

In its present form the Clean Water Act (CWA) is ineffective in controlling surfzone pollution from urban runoff and sewer infrastructure leaks. In fact, by forcing cities like San Diego to divert billions of dollars toward secondary treatment levels, the CWA delays effective solutions to the more significant threats to near shore water quality, namely non-point source pollution. In my view the more urgent need is to repair and upgrade the basic plumbing of the sewer infrastructure so that all the sewage makes it to the treatment facility. In addition the capacity of the primary treatment level must be increased 4-5 times so that the untreated storm drain runoff can also receive at least primary level treatment and be subsequently discharged offshore through ocean outfalls where the dilution rates are high.

Without these structural remedies the only short term relief from non-point source pollution will follow from "Best Management Practices" (BMP's) as outlined in section 319 of the CWA. BMP's are presently not working because they rely on voluntary compliance and because local agencies have no standards with which to define NPDES storm drain permit levels. There will be no such standard until Congress invests in additional research to determine what the spectrum of pollutants commonly are in storm drain runoff.

Our experience with the present system of self monitoring in water quality testing to insure compliance with NPDES permit levels, is that this system allows polluters to select testing schedules for which discharges are minimal. Only a system of remote monitoring by a dispassionate third party can eliminate this kind of aliasing. Furthermore, most testing is done in the neighborhood of offshores outfalls, where people are not swimming. Insufficient water quality monitoring resources are directed towards shore stations at popular beaches. Since surfzone pollution is due to episodic non-point source runoff events, the likelihood of infrequent shore testing providing adequate warning to bathers is remote. In addition, there needs to be a uniform archival format for reporting water test results so that screening for violations can be automated by computer. Under the present non-uniform reporting arrangements, thousands of violations lie unnoticed in EPA files. A good example of this was brought to light by the Surfrider Foundation litigation against 2 pulp mills for over 40,000 previously unnoticed violations of the CWA.

Finally, section 404 of the CWA needs to be strengthened to protect our existing wetlands. These are Natures natural urban runoff treatment systems. In fact Congress should give consideration to wetlands restoration as a remedial approach to the urban runoff problem.

Sincerely,

Scott A. Jenkins, PhD
Environmental Director

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